ELECTRICAL REVIEW

June 20, 1947

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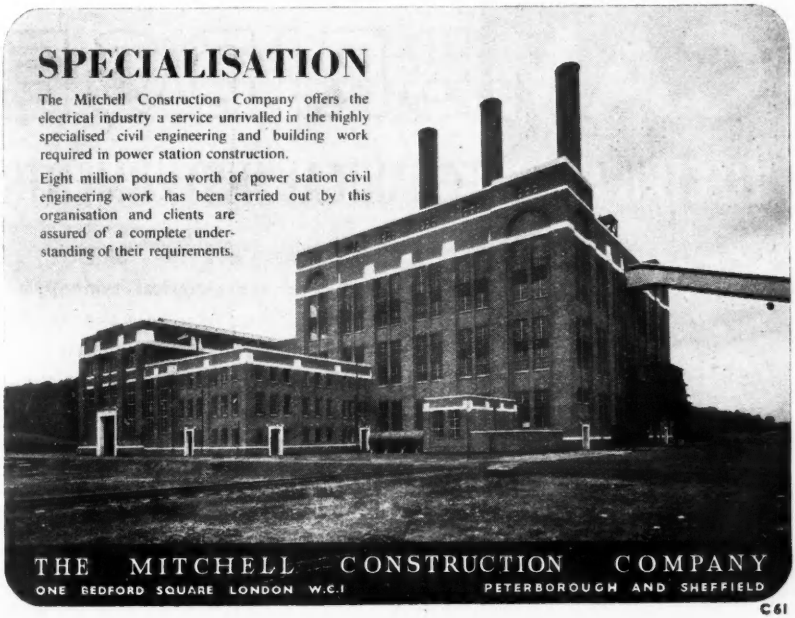
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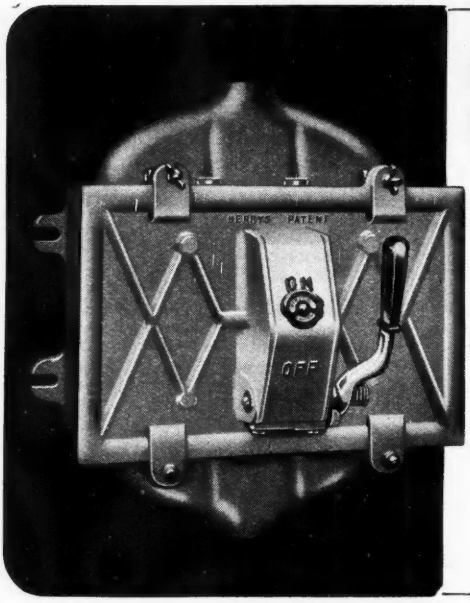

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ELECTRICAL REVIEW

THE OLDEST ELECTRICAL PAPER — ESTABLISHED 1872

Vol. CXL. No. 3630 JUNE 20, 1947 9d. WEEKLY

Transformer Iron

A Call to British Steelmakers

ELECTRICAL manufacturers are being called upon to meet a pent-up demand for transformers—in large part to meet competition in overseas markets—which requires a tonnage of sheet steel nearly half as much again as that used before the war. Efforts of designers to make up lee-way are, however, hampered by the difficulty of securing sheet steel having the properties that would put the cores of transformers on a par with their electrical features.

Capitalized Losses

In comparing first costs of machines not only has the price quoted to be taken into account but also the capitalized value of the losses throughout a useful life of, say, twenty years. That alone would make the attainment of low iron losses of the greatest importance. Electrical efficiency, however, is not the only criterion. In many instances the main advantage would be a reduction in physical dimensions for the same output.

In a contribution to the *I.E.E. Journal* for April, Mr. D. Edmundson indicates the lines along which work is being done in the United States. These entail elaborate heat treatments at various stages of steel production, including annealing in controlled atmospheres. How far the most notable of the figures of watts per pound loss which he cites are typical of general practice, as distinct from laboratory results or other special cases, is not clear. They relate largely to the cold-rolling process and it is at least significant that in the United States very large numbers of small 100-V transformers are employed, for which "clock spring" or wound cores of cold-rolled iron can be made comparatively easily and the "directional" requirement met cheaply.

Electrical steel experts in Great Britain seem to incline to the view that, for conditions here, the considerable additional cost incurred in cold rolling, with the added complication of providing directional characteristics to the steel (which also has the demerit of being extremely brittle), is unlikely to be justified generally in the face of improvements in hot-rolled material which are regarded as quite feasible. On the other hand, Mr. K. W. McBain, in another article refers to the possibility of operating cold-rolled iron at flux densities up to 25 per cent greater than those practicable with hot rolling. The consequent reduction in dimensions could appreciably increase the maximum rating of transformers able to meet the loading-gauge requirements of the railways.

Research Necessary

Much of the knowledge available appears to have an empirical basis and fundamental research is required into growth of grain size and changes in physical structure of iron at all stages from pig to sheet and also in exploring further the implications of the domain theory of ferro-magnetism. Such problems could, we suggest, be profitably studied by the new mechanical engineering research organization of the Department of Scientific and Industrial

Research. In the meantime, with immediate results in view, research needs to be applied to the reduction of impurities and lessening strains in processing. The lines of procedure needed can be gauged from the account of the Sankey laboratories given in our issue of October 25th last.

Full co-operation of steel manufacturers is essential. Although the quantity of electrical sheet used for transformer cores —little more than 20,000 tons a year—is only a small proportion of the total output of British steel makers, its quality is of some importance to them. Ability to supply the needs of the electrical industry is not without its prestige value.

Coal and Boilers

ON several recent occasions Lord Hyndley, chairman of the National Coal Board, has given assurances that the grading and cleaning of coal is being attended to. The importance of coal consistency was referred to by Sir John Greenly at the annual meeting of Babcock & Wilcox, Ltd. He said that the standardization of steam-raising plant had been urged but this was no easy task even when supplies of good coal were available; it was even more difficult in present circumstances. If, however, regular supplies of graded fuel of known calorific value were available, and purchasers would be content during the next few years to accept types of steam-raising plant of proved efficiency and design, much could be done to increase production.

Hairdressers' Installations

ELECTRIC hair clippers are useful appliances but they are invariably installed in dangerous situations and attention is called to the need for more care by the recent death of a hairdresser at Wealdstone. We are not in possession of details of this particular case, but we have frequently seen clippers connected to the circuit by two-pin plugs and doubtful-looking flex far too flimsy to withstand the twists and strains to which it was liable. There is always a water system in close proximity so that the possibility of severe shock is ever present. It seems to us that visits to all these establishments by the " electric inspectors " of supply authorities to check their installations are desirable and suppliers of equipment should also provide instructions on installation and maintenance.

Electrical Honours

THE Birthday Honours List, in our opinion again does not do full justice to the electrical profession and industry, but there are some well-known names in it. Most noteworthy is that of Miss Caroline Haslett, who becomes a Dame of the Order of the British Empire, a fitting award for her services during the war and since. Among the men who are honoured are Mr. H. L. Kirke, head of the B.B.C. Research Department (C.B.E.); Mr. O. F. Brown, of the Department of Scientific and Industrial Research (C.B.E.); and Mr. H. W. Swann (O.B.E.) whose work in improving safety in industry is well known.

Economic Rural Development

MOST advocates of rural electrical development would claim that a substantial backing of an urban area is most desirable, if not essential, if the service is to be given efficiently and economically and if supplies of electricity are to be made available at a price which the consumer can afford. That is not necessarily the case as is shown in our review this week of the progress made during the past fourteen years in Dumfriesshire, where Mr. J. S. Pickles, this year's president of the I.M.E.A., has brought electricity to four-fifths of the potential consumers in a 1,200-sq-mile area in which the population is only fifty per sq mile. Such an achievement as this might well be noted by those who will insist on speaking of rural electrification as something quite new.

Mechanicals' Centenary

PAST achievements of the Institution of Mechanical Engineers (the oldest body of its kind in the world), which celebrated its centenary last week, were worthily outlined by the Lord President of the Council at the opening function. Evidently, however, he attached even more importance to its potentialities, since those who made past history in mechanical engineering were necessarily empiricists, while those responsible for the future will be able to base their work on data provided by research. Of good augury for the future, as it has been helpful to the Government during the war and since, is the harmony between the three senior engineering institutions, which Mr. Morrison said was " free from internal friction or petty jealousies."

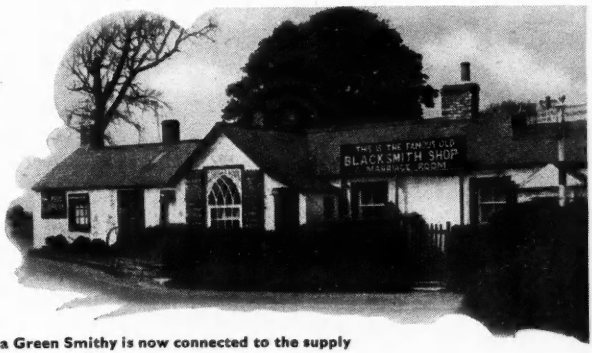
Scottish County Scheme

RAPID PROGRESS IN DUMFRIESSHIRE RURAL DEVELOPMENT

This typical village, Moniaive, has a 230/400-V supply and is wired almost throughout with the "Weathertex" under-eave system. Like many other villages it has electric street lighting

FOURTEEN years ago the 1,070 sq miles of Dumfriesshire had virtually no public electricity supplies available, except in the burgh of Dumfries itself. To-day over 12,000 consumers out of a total potential number of about 15,000 in the county (excluding Dumfries burgh) and a further 105 sq miles of Roxburghshire are connected. The only parts of the area not supplied are wild moorlands. It is no wonder, therefore, that in view of this progress the area for which this year's president of the I.M.E.A., Mr. J. S. Pickles, is responsible in his capacity of county electrical engineer, has become something of a "show place" for rural electrical development.

Unlike the Bedford and Norwich rural development areas, the Dumfries project was not sponsored by the Electricity Commissioners and its initiation was due entirely to the enterprising and far-sighted policy of the County Council. A Special Order obtained in 1929 covering part of the county was followed two years later by a second Order extending the area of supply to the whole of the county, except Dumfries burgh itself, which already had its own municipally owned undertaking. A further extension of the supply area in 1937 brought in the parish of Castleton in the county of Roxburghshire, making the total area supplied over 1,200 sq miles. Fringe Orders were also obtained

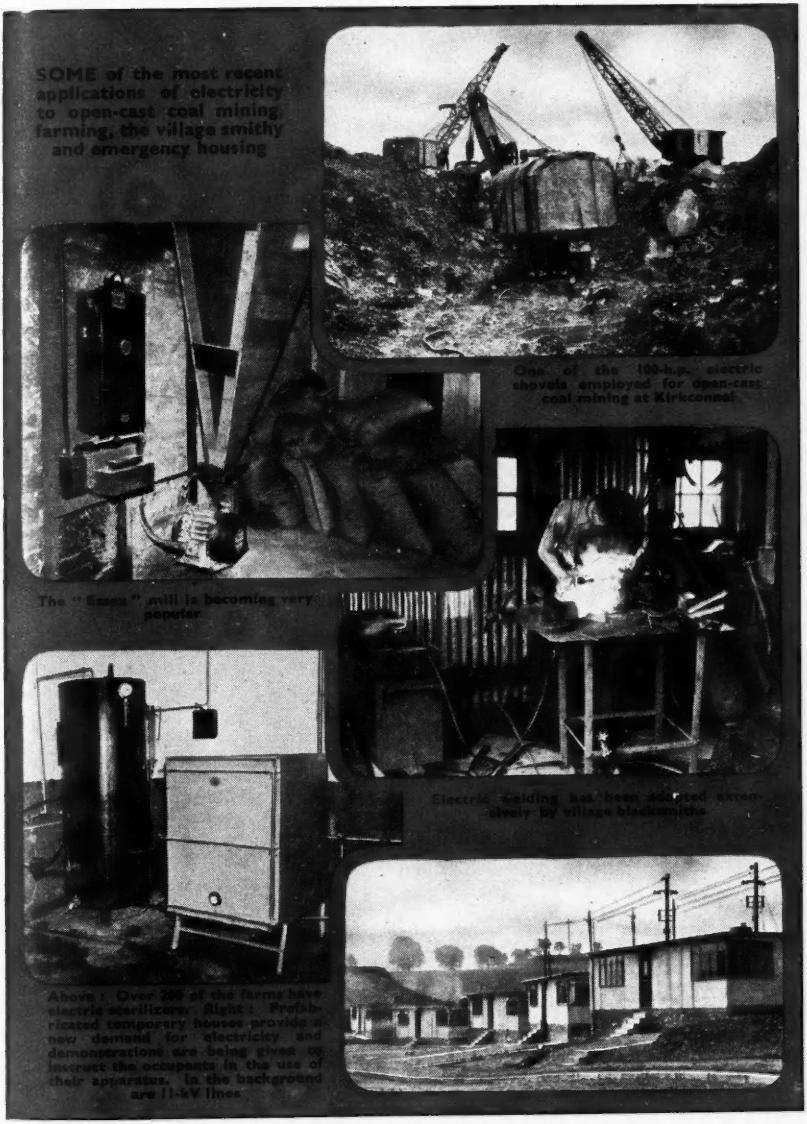


The famous old Gretna Green Smithy is now connected to the supply

AYR
LANARK
PEEBLES
SELKIRK
ROXBURGH
DUMFRIES
KIRKCUDBRIGHT
SOLWAY FIRTH
KIRKCONNEL
SANQUHAR
PENPONT
MONIAIVE
THORNHILL
LOCHMABEN
DUNSCORE
DUMFRIES
MOFFAT
ESKDALEMUIR
LOCKERBIE
ECCLEFECHAN
NEWCASTLETON
LANGHOLM
ANNAN
GRETNA
MAIN LINES 3 PHASE 33 kV
" " " 11 kV
SPUR " 1 " 11 kV
TRANSFORMERS 3 " 33 kV
" 3 " 11 kV
" 1 " 11 kV
SCALE IN MILES 0 1 2 3 4

covering the provision of a supply to isolated premises in Cumberland.

Ever since the inauguration of the scheme it has been the County Council's policy to give supplies, as far as practicable, without requiring any contribution towards the capital cost and without imposing a guaranteed minimum consumption. This bold departure from general practice has been fully justified by results and, as an indication of the


SOME of the most recent applications of electricity to open-cast coal mining, farming, the village smithy and emergency housing
One of the 100-h.p. electric shovels employed for open-cast coal mining at Kirkconnel
The "Essex" mill is becoming very popular
Electric welding has been adopted extensively by village blacksmiths
Above: Over 200 of the farms have electric sterilizers. Right: Prefabricated temporary houses provide a new demand for electricity and demonstrations are being given to instruct the occupants in the use of their apparatus. In the background are 11-kV lines

soundness of the financial aspect of the scheme, it may be mentioned that only about £300,000 of a total capital expenditure of about £700,000 is outstanding.

To help those new to electricity, demonstrations and film shows covering all types of electrical apparatus were given regularly throughout the area before the war, and showrooms were opened at the Electricity Department's offices at Marchmount, Dumfries, at Annan, Langholm, Lockerbie and Thornhill. Nowadays, when economy is the watchword, demonstration work is confined largely to electrical "at homes" to instruct occupants of the new temporary houses in the use of their apparatus.

Up to the time when wartime difficulties intervened, consumers were offered assisted wiring and hire schemes for cookers, water heaters, wash-boilers, kettles and fires. These proved extremely popular, as, indeed, they should have done, since it was possible to obtain, for example, a 1½-gal. water heater complete with plumbing and wiring for only 1s. a quarter.

Further encouraged by an attractive two-part domestic tariff (5s. per room per quarter plus ¾d. per kWh) applicable throughout the area, nearly one-half of the domestic consumers now have electric cookers installed and almost as many either a water heater or wash-boiler. As a result, sales of electricity per head of population for domestic purposes have attained the unusually high figure of 450 kWh per annum.

Almost every one of the schools run by the County Council has some form of electric heating. Here can be seen the panel heating in a classroom at Moffat Academy

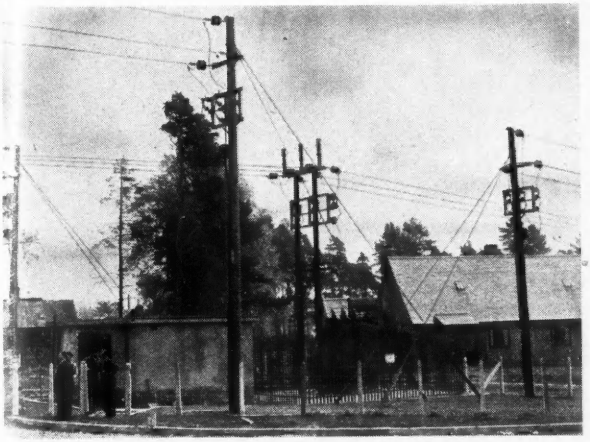
So far we have referred almost exclusively to residential supplies. Our reason is that these predominate to the extent of accounting for almost exactly one-half of the total output. Shops, halls, schools, hotels, etc., consume about one-quarter, while farms and factories each take approximately one-eighth of the total. The area is, in fact, practically devoid of the industrial backing which is widely considered essential to the satisfactory economic operation of a rural scheme. What industry there is comprises a few quarries, saw mills, open-cast coal sites, a chemical factory, grain mills, dairies, a bacon factory, textile works, etc. The tariff offered for these ranges from 2d. per kWh, reducing with quantity to ¾d. per kWh, subject to the usual coal clause.

Special efforts to interest farmers in electricity have been made from the commencement, including the production of a booklet entitled "Farm Flashes," which pointed out the various applications of electricity for milking, sterilizing, grinding, threshing, cake breaking, chaff cutting, sawing, pumping, incubating, brooding, pen lighting, soil heating, etc. These services are available at the same kWh charge as for the two-part domestic tariff, namely, ¾d., but the fixed charge is 7s. 6d. per room instead of 5s., with no additional charge for steadings or outbuildings.

As an indication of the success of this scheme it is noteworthy that about 800 farms out of 1,300 holdings of over 50 acres are now supplied. Among electrically operated farming equipment are 390 milking machines, 204 sterilizing equipments, and 420 threshers and bruisers. The "Essex" mill in particular is becoming very popular. Generally speaking, however, though the labour shortage tends to alter this, it is not the farming applications of electricity that make the initial appeal to the farmer, who wants his supply primarily for lighting, radio, cooking and general domestic purposes. At the moment about fifty extensions of electricity supply to farms

are held up on account of lack of materials.

It is not only in the houses and farms that electricity is making its main effect felt. It has penetrated every corner of the rural community—the church, the school, the village institute, etc. Most of the hundred or so schools run by the Education Authority have some form of electric heating, if only for supplementary use. School catering is a recent application and in addition to an all-electric central kitchen serving 3,000 meals a day already in use at Dornock, three similar establishments are being provided at Thornhill (almost completed), Marchmount and Lockerbie. The meals cooked at these central kitchens are conveyed in heat-insulated containers to the individual schools, where electric hot-cupboards warm them up before serving.



A 2,000-kVA, 33/11-kV transformer and substation at Penpont. A new 33-kV line from Dumfries to Penpont is now being extended to Kirkconnel. Note the new Swedish houses in the background

The sparseness of the population (about fifty per sq mile) and the necessity for keeping down costs raised an interesting problem of distribution. The undertaking does not possess any generating stations but receives its supplies from the grid at two points, Dumfries and Gretna. For convenience in operation the area is divided into three districts centring on Thornhill, Lockerbie and Gretna. Sixty-five miles of 33-kV transmission line link up the main substations at Dumfries, Penpont, Lockerbie, Ecclefechan, Gretna and Annan. A new 33-kV unearthed line just completed from Dumfries to Penpont is now being extended to Kirkconnel.

From the main substations 3-phase, 11-kV main lines (320 miles) forming the backbone of the system are carried out to the north-west corner of the area through Sanquhar, in the north to Moffat, in the north-east to beyond Eskdalemuir, and in the east to Newcastleton. With a very few exceptions all the spur lines totalling 255 miles are single-phase at 11 kV. Apart from cheapness (its capital cost is 25 per cent less and the maintenance costs are lower), this arrangement is claimed to have a number of technical advantages over the 3-phase system, such as greater simplicity, absence of balancing difficulties inherent in small 3-phase supplies and better use of the mains and transformers provided. The only disadvantage appears

(*Continued at foot of next page*)

Growth of Undertaking

Year ended May 15th	1933	1935	1937	1939	1941	1943	1945	1947
No. of consumers	740	4,646	7,508	9,064	9,876	10,338	10,573	12,047
Maximum demand (kW) ..	150	1,409	2,571	3,962	6,065	8,100	9,390	10,285
Sales of electricity (million kWh)	0·19	3·59	7·59	10·42	15·07	29·58	30·91	32·2*
	£	£	£	£	£	£	£	£
Total revenue	5,535	36,553	66,689	92,595	114,254	174,917	192,714	215,000*
Total capital expenditure ..	117,074	295,442	414,930	494,104	529,589	535,713	544,543	650,000*
Average price received per kWh sold	3·5d.	2·05d.	1·76d.	1·62d.	1·48d.	1·23d.	1·29d.	1·30d.*

* Estimate.

MORE delegates than ever are expected next week to attend what, in view of the pending nationalization of the electricity supply industry, may well be the last convention to be held by the Incorporated Municipal Electrical Association, at any rate in its present form. The choice of Bournemouth is a happy one since previous conferences held there have been exceptionally memorable ones. It was there in 1935 that the Association joined forces with other electrical organizations to hold the one and only National Electrical Convention.

Since there are only two papers to be read this year more time is available for discussion, for visiting the Electrical Exhibition at the Majestic House Garage, and for enjoying the many amenities the town has to offer.

Delegates will be able to obtain their badges at any time on Monday between 9.30 a.m. and 5 p.m. at the Lounge in the Pavilion. On Monday afternoon at 3 p.m. the president, Mr. J. S. Pickles, will officially open the Electrical Exhibition, full details of which are given in succeeding pages. This exhibition, which provides an opportunity to follow the progress that has been made during the year in the design of electrical products, particularly in the domestic field, will be open every day, Monday to Friday inclusive, from 10 a.m. to 6 p.m. The public will be admitted on Wednesday and Friday.

Also on Monday afternoon, at 4 p.m., the Committee of the Smaller Municipal Electricity Undertakings will hold its annual general meeting. This will be in the lounge of the Town Hall and those attending should note that the entrance is in St. Stephen's Road and not through the main doors. At this meeting the opportunity will be taken to make a presentation to Mr. W. P. Lilwall on his retirement to mark the Committee's appreciation of the valuable service he has rendered not only to the Association but to the electrical industry generally. On Monday evening the President and Mrs. Pickles will hold a reception at the Pavilion and this will be followed by dancing.

The first official business is on Tuesday morning, when at 10.30 in the Concert Hall

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Scottish County Scheme (*Contd. from p.* 1007)

to be in the use of single-phase supplies for large motors, but as these are only infrequently required in an area such as this Mr. Pickles contends that the disproportionate capital cost of providing 3-phase mains is unjustifiable. About 220 miles of low-voltage mains complete the distribution system. In all, 864 miles of mains and 994 11-kV pole-type transformer equipments have been necessary to supply existing consumers scattered over a wide area.

For their assistance in preparing this article we should like to thank Mr. Pickles, his deputy Mr. W. H. Wills, and his consumers' engineer Mr. U. F. Murray.

Convention

of the Pavilion the Mayor of Bournemouth, Councillor J. W. Moore, J.P., will open the convention with a civic welcome, and after this comes the presidential address, which, in view of the conjectures as to the future of the electricity supply industry in general and the Association in particular, is awaited with especial interest. At the second session in the afternoon Mr. F. W. Lawton, city electrical engineer and manager of Birmingham, will read a paper on " Recent Developments in Power Station Practice " and a stimulating discussion is expected. Meanwhile the ladies have been invited by the Dumfries County Council Electricity Department to take tea with Mrs. Pickles in the Ballroom. The Mayor and Mayoress will give a reception in the evening and there will again be dancing.

For Wednesday whole- and half-day excursions have been planned. The largest party will probably choose to board the *Bournemouth Queen* for a nine-hour trip round the Isle of Wight. Lunch will be served on board and there will be a stay of an hour and a half at Ryde. The boat is due back at Bournemouth at 6.30 p.m. Those who go on the motor-coach trip to Cheddar and Wells will have an even longer day's outing. Leaving the Royal Bath Hotel at 8.20 a.m. they will visit Blandford, Sturminster Newton, Wincanton, Bruton, Shepton Mallet and Wells before having lunch at Cheddar at the Cliff and Bath Arms Hotels. After visiting the famous caves they will return via Wookey Hole, Glastonbury, Ilchester, Yeovil, Sherborne, Blandford and Badbury Rings, tea being taken at Montacute House, an Elizabethan mansion just outside Yeovil.

As alternatives there are two afternoon motor-coach trips, one to Swanage and Corfe Castle and the other to the New Forest, and a visit to the site of the Bournemouth & Poole Electricity Supply Company's new power station at Poole, reference to which is made on page 1021.

Mr. R. Birt, Ealing borough electrical engineer, who is a barrister-at-law, will read his paper on " The Law Relating to Electricity Supply " on Thursday morning.

A lunch is being organized by the Electrical Association for Women. The afternoon is left free with the special object of giving delegates a chance to pay a visit to the Electrical Exhibition. In the evening at the banquet the principal guest will be Prof. J. D. Cockroft, who is expected to speak on the future use of atomic energy in the generation of electricity. A cabaret begins at 11 p.m.

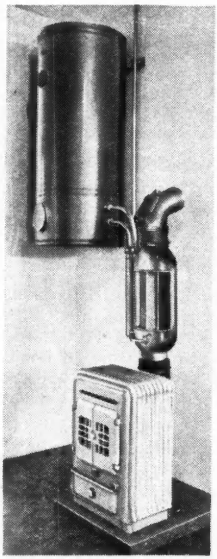
On Friday morning the general meeting of the Association, preceded by the Council meeting, will take place and towards the conclusion of this the new president will be invested with his chain of office. In the afternoon there will be a further opportunity to visit the site of the new Poole power station.

I.M.E.A. Exhibition

Electrical Apparatus to be seen at Bournemouth

IN view of production difficulties and the need for maximum output of standard lines very few new items are to be seen at this year's exhibition of electrical products held at the Majestic House, Hinton Street, Bournemouth, in connection with the I.M.E.A. Convention. Furthermore most of what new products there are have already been seen at the British Industries Fair. The somewhat larger number of exhibitors, however, gives added interest to the display which concentrates largely on domestic apparatus, though distribution and installation equipment, lighting fittings (particularly for streets) and electrical instruments are also well represented.

Aidas Electric, Ltd. (Stand 37).—Of particular interest in view of the present need for economy both in coal and electricity are the "Circoil" heating unit, for utilizing part of the heat normally wasted in the flues of solid fuel heating stoves, and the "Coal-Electric Sadia," type C.E.L., a water heater which employs either coal or electricity. The "U.D.B." unit provides a hot water supply for both kitchen and bathroom from one compact unit under the draining board in the kitchen, while a 3-gallon free-outlet water heater designed for the modern kitchen is of pleasing appearance.



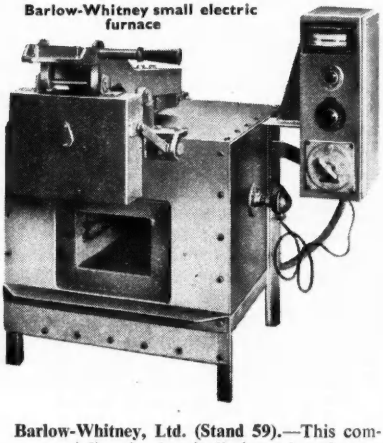
Aidas "Circoil" water heating unit

Automatic Telephone & Electric Co., Ltd. (Stand 28).—An illuminated map shows the location of important "Rythmatic" centralized control installations throughout the country and a standard control panel and relays switching whole areas on or off illustrate the speed and simplicity with which it is possible to shed load at peak periods, switch street lamps on, off or half-off, and switch change-over tariff meters, etc. Also on view is equipment for the supervisory control, indication and metering from a distant or central point of electric power networks, gas, water or oil flows and power on electric railways.

Backer Electric Co., Ltd. (Stand 57).—This company is showing the Backer patent tubular heating elements, including radiant encased and open-tube boiling plates; grill boiling plates; elements for ovens, immersion heaters, storage water heaters, kettles and industrial and heavy-duty cooking applications. Especially interesting are a new 8-in. open-tube radiant plate combining a variable simmering load and a composite grill and boiling plate each separately or jointly controlled.

H. J. Baldwin & Co., Ltd. (Stand 22).—Apex, arched and flat type cable protection covers are accompanied by stoneware conduits, troughing, stay blocks, marker posts, etc. A special feature of the latest cable protection cover is that, whilst the self-locking device fulfils its purpose very efficiently, there is also provision for the additional use of galvanized metal staples which ensure a more positive interlock than can be achieved with any purely self-locking design. An improved heat control unit has been adopted for "Thermat" electric blankets and pads (for which the company is sole agent and distributor) and a new process renders the fabric fireproof. "Thermat" products shown include a new heating pad.

Barlow-Whitney small electric furnace



Barlow-Whitney, Ltd. (Stand 59).—This company specializes in electrically heated equipment for industrial and commercial applications.

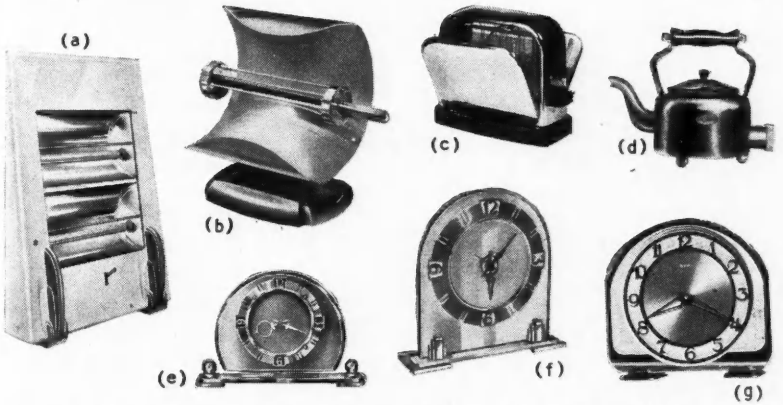
Examples are given of some of the smaller products, such as small general purpose furnaces for annealing, hardening, tempering, drying, baking, sample testing, etc.; a wax dropper; industrial hot-plates for powder drying, pre-heating, surface hardening, etc.; automatic and non-automatic immersion heaters for commercial and domestic purposes; glue, metal and solder pots; soldering irons; and hot-cupboards.

Bastian & Allen, Ltd. (Stand 38).—A working model of an electrode steam boiler less than 12 in. high is complete with miniature fittings and mountings, a glass shell enabling the interior to be seen. The boiler and pump are controlled from a standard full-size control panel, the steam generated being used to operate a model engine. A standard 70-kW steam boiler and a hot water boiler giving 102,000 B.T.U./hr. are also shown. In the domestic range of appliances are thermostatically controlled electric storage water heaters of the pressure, displacement and gravity types. Immersion heater elements include the new Gallium loop type, as well as an oil heater of all-steel construction. An air heater for industrial heating has withdrawable elements.

Belling & Co., Ltd. (Stand 9).—New items of particular interest are cookers designed for easy conversion from two to three plates; a " Baby Belling " cooker fitted with auxiliary boiling plate and hob extension; a breakfast cooker; fires, including illuminated, panel and corner models; convectors and warm air circulators; a towel airer, bedwarmer, boiling plate and plate warmer.

Benjamin Electric, Ltd. (Stand 15).—Diagrams explain the " Crysteel " porcelain enamelling employed on a number of fittings shown, including two recently introduced fluorescent trough fittings, the " Flurolier A " for two 80-W lamps and the " Flurolier B " for two 40-W lamps, the " Glassteel " diffuser, R.L.M. dispersive " Duoflux " and stock bin unit. The high bay unit in " Brytal " anodised aluminium and the plastic and metal, screwless " Coolicon " shades are also displayed.

Berry's Electric, Ltd. (Stand 46).—Ironclad switchgear in the 35-500-A class is shown, together with an " Ironsafe " switchboard

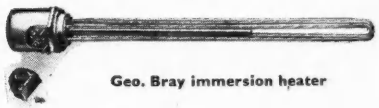


(a) Falco No. 35 fire. (b) H.M.V. " Bruton " fire. (c) H. Fisher (Oldham) toaster. (d) Best Products kettle. (e) Temco " No. 630 " clock. (f) British Electric Meters " Bedford " clock. (g) One of the new Ferranti clocks

typical of many installed in widespread industrial and commercial concerns.

Best Products, Ltd. (Stand 58).—In view of the raw material shortages, the company has standardized on one size of electric kettle, 3½-pint loaded to 1,250 W. Its copper body is nickel-plated inside and out and an automatic safety device of the connector ejecting pattern is fitted. Two sizes of non-automatic and automatic safety device kettle elements are now in production, with loadings of 700 W and 1,250 W. Compact vacuo-junctions for measuring small audible and radio-frequency currents are available for building into small ammeters and voltmeters.

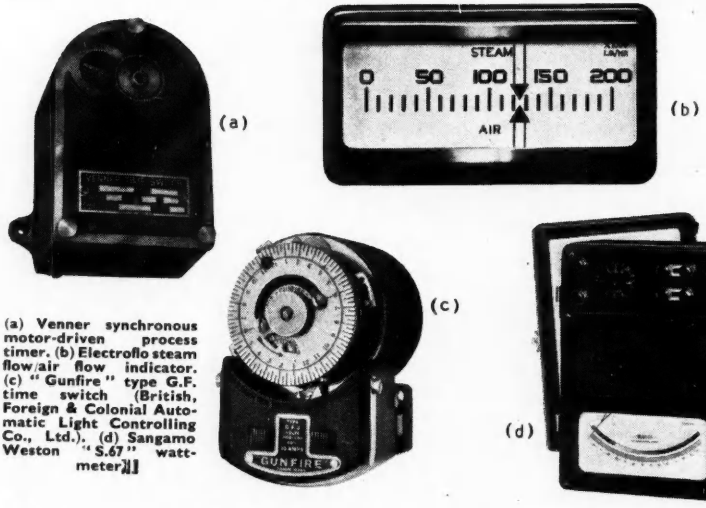
Geo. Bray & Co., Ltd. (Stand 41).—" Chromalox " and " Tubalox " immersion heaters, strip, and ring and sheathed wire type elements bent



Geo. Bray immersion heater

into various forms are accompanied by samples of kettle elements. A sectioned cylinder shows how immersion heaters and circulators should be installed and there is a small air heater battery for fitting in ventilating ducts. Refractory insulators for cookers, immersion heaters and other domestic electrical equipment are represented, also steatite parts for h.f. equipment.

British Electric Meters, Ltd. (Stand 64).—A comprehensive range of electric meters embodies important modifications. Electric clocks include pleasing designs in mirror glass and self-starting



(a) Venner synchronous motor-driven process timer. (b) Electroflo steam flow/air flow indicator. (c) "Gunfire" type G.F. time switch (British, Foreign & Colonial Automatic Light Controlling Co., Ltd.). (d) Sangamo Weston "S.67" watt-meter

desk and wall clocks for home, office and shop. Electric irons and fires are other new products.

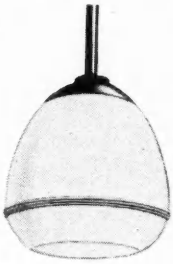
British Foreign and Colonial Automatic Light Controlling Co., Ltd. (Stand 55).—Among time switches, time lags, process timers, traffic light switches, etc., a special display is made of the "GF" type time switches.

British Insulated Callender's Cables, Ltd. (Stand 48).—The chief exhibit is the new pressed copper service box. The greater mechanical strength of copper enables the box to withstand rougher treatment than the lead type and also makes it suitable for improvised methods of protection. The eight boxes available cater for all the usual sizes of branch and mains cables, and the copper sheet is scored axially at the cable entry position for opening out to accommodate a wide range of cable sizes.

British National Electrics, Ltd. (Stand 36).—On this section of the Johnson & Phillips stand three items now being manufactured in quantity are shown:—The Charlton 1½-gal. non-pressure water heater, the Charlton "Twin" dual-purpose water heater and the B.N.E. breakfast cooker. Cut-away models of both water heaters are exhibited. A view of the main assembly shop of the reconstructed Newarthill factory forms a background.

British Power Transformer Co., Ltd. (Stand 42).—A specially developed standardized transformer for rural distribution work has an outer container composed of salt- and acid-proof stoneware material. Among advantages claimed are a reduction in capital cost up to 20 per cent, two-hole mounting, negligible maintenance costs, high efficiency and robustness.

British Refrigeration Association (Stand 31).—A composite display of typical domestic electric refrigerators has been arranged on behalf of the following members: J. Britain & Son (Engineers), Ltd.; Frigidaire, Ltd.; International Refrigerator Co., Ltd.; Marco Refrigerators, Ltd.; and Pressed Steel Co., Ltd.



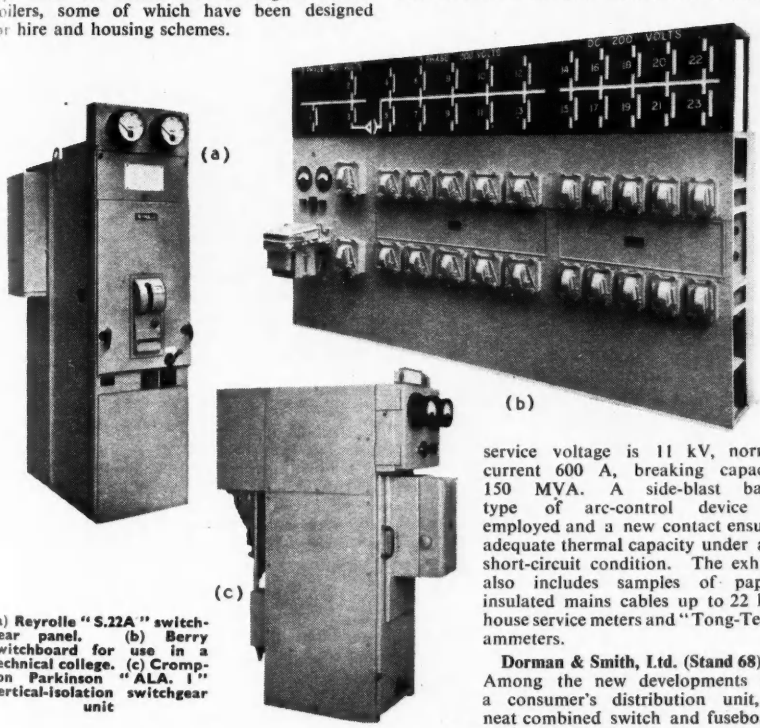
B.T.H. "Mazdalux" opal-glass fitting for school-lighting

British Thomson-Houston Co., Ltd. (Stand 4).—The new "Mazdalux" lighting fitting No. F834 for use with an 80-W 5-ft fluorescent lamp has been specially designed for schools. It permits 40 per cent of the available light to spread upward and special side reflectors give 45 deg or 30 deg angle of cut-off. Two new fittings for tungsten lamps are also specially suitable for

schools. Street lighting with "Mazda" 80-W 5-ft fluorescent lamps has now passed from the experimental stage, and a special demonstration has been arranged in the Square, Bournemouth. Examples of the new "Stylised" range of sixteen side-entry lanterns are also exhibited, while the new horizontal enclosed lantern incorporates the results of many years of research. For minor road and side street lighting the "rural parish" type lanterns have been developed.

Bulpitt & Sons, Ltd. (Stand 53).—A mystery kettle which boils despite having no apparent source of electrical energy attracts attention to this company's display of "Swan Brand" domestic appliances. Besides kettles of both old and new designs are heat-controlled irons, fires, coffee percolators and urns.

Burco, Ltd. (Stand 24).—The new "217" cabinet washing machine is electrically heated but hand operated. Both round and cabinet type units are included in a range of wash-boilers, some of which have been designed for hire and housing schemes.



(a) Reyrolle "S.22A" switchgear panel. (b) Berry switchboard for use in a technical college. (c) Crompton Parkinson "ALA. 1" vertical-isolation switchgear unit

Cable Covers, Ltd. (Stand 16).—Drawing attention to the widening range of transmission and distribution equipment and accessories is a large model of the company's manual, "The Power Engineers' Equipment Guide," coloured ropes leading to actual pages of the publication.

Cable Makers' Association (Stand 30).—Cable samples include mains cables up to 132 kV, various rubber-insulated cables and wiring system installation materials.

E. K. Cole, Ltd. (Stand 67).—In addition to fluorescent lighting fittings and control gear there is a group of tungsten lamps, including general service and high wattage types, pigmy sign lamps, traction and tubular units, striplight and candle lamps. Special items are cinema projection lamps, lamps for ozone generators and the "Plastalux" all-plastic table lamp. Thermovent heaters comprise inset and floor standing domestic models and a new steel-cased industrial unit.

Crompton Parkinson, Ltd. (Stand 32).—The type ALA.1 metalclad vertical-isolation switchgear unit shown incorporates an oil circuit-breaker and air-insulated busbars. Its maximum service voltage is 11 kV, normal current 600 A, breaking capacity 150 MVA. A side-blast baffle type of arc-control device is employed and a new contact ensures adequate thermal capacity under any short-circuit condition. The exhibit also includes samples of paper-insulated mains cables up to 22 kV, house service meters and "Tong-Test" ammeters.

Dorman & Smith, Ltd. (Stand 68).—Among the new developments are a consumer's distribution unit, a neat combined switch and fuseboard for the smaller home, and the "Sterling" switch fuse. Other items are an open type switchboard of the marine type, a totally enclosed air-break circuit breaker, a

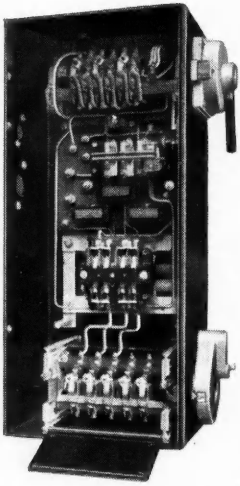
section of skeleton substation gear of the wall-mounting type, flameproof gear, "Diolux" and "Dioprism" prismatic lighting fittings and bulkhead designs, the "Ordsal" handlamp, fuseboards, the "DS" fused plug and socket, and cooker control unit.

Edison Swan Electric Co., Ltd. (Stand 49).—Exhibits include "Royal Ediswan" electric lamps, "Escura" discharge lamps, fluorescent discharge tubes, industrial pattern colour modification unit, a 2-lamp fluorescent lighting unit, the "London Minor" and "Granby" street lighting lanterns, a new underwater aluminium floodlighting unit for medium-sized fountains, an automatic colour-changing floodlight, and a specimen reflector in plastic for use with tubular fluorescent lamps. Thermionic valves for industrial and electro-medical applications; batteries and accumulators for emergency lighting, traction, etc.; "Tungar" battery chargers and cable are also represented.

"Ediswan" underwater floodlight projector

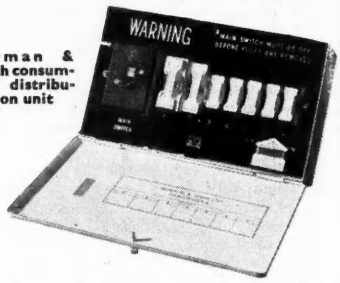
Electric Lamp Manufacturers' Association (Stand 47).—The high efficiency and reliability of modern electric lamps and their contribution towards efficient and economical lighting schemes form the theme of the Lighting Service Bureau stand. The exhibit illustrates how the luminous efficiencies of electric lamps have risen, comparative values being given for tungsten filament lamps and fluorescent tubes.

Electrical Apparatus Co., Ltd. (Stand 21).—House service meters incorporate type EH metering element which has an unusually high torque (6 grm-cm.). Samples of the synchronous motor used in the two-part tariff meter show how when energized, the rotor "floats" in the electro-magnetic field thus obviating the necessity for a thrust bearing. Moving-coil and moving-iron industrial instruments include the new "Motammeter" designed specifically for motor starters. A working model demonstrates



E.A.C. star/delta cam pillar (with arc barriers removed)

Dorman & Smith consumers' distribution unit



the single-phasing preventor and overload units now fitted as standard to most of the company's starters. A new range of flush-mounting push-buttons and a new auto switch are also shown together with one of the new cam panels.

Electrical Association for Women (Stand 17).—Fuel economy through education is the theme of this exhibit.

Electrical Industries Benevolent Association (Stand 18).—A graph emphasizes the increased work which E.I.B.A. has been doing for non-manual workers and their dependants in all the electrical industries.

Electroflo Meters Co., Ltd. (Stand 23).—A working demonstration is given of a self-contained, fully stabilized regulator applied to superheated steam temperature control. A motivated diagram shows how the regulator responds to changes in temperature, as measured by the thermocouple, and resets the desuperheating valve to return the steam temperature to the correct value. The recently introduced steam flow/air flow indicator gives a new lead in legibility of boilerhouse meters. A diaphragm draught gauge using beryllium copper as the bellows material is also on view.

Elexcel, Ltd. (Stand 27).—Four "Xcel" domestic appliances make their first appearance. A cabinet cooker is available in combinations of either black and white or green and cream vitreous enamel. The hob equipment offers the alternative of one or two boiling plates with grill boiler as desired. Alternative breakfast cookers have boiling plate and grill boiler or grill boiler only. A thermostatic iron is available with a sole plate of either chromium plated cast iron or polished aluminium. The "Woolton" imitation coal fire, with two 1-kW rod elements in chromium reflectors, is available in golden bronze or silver green.

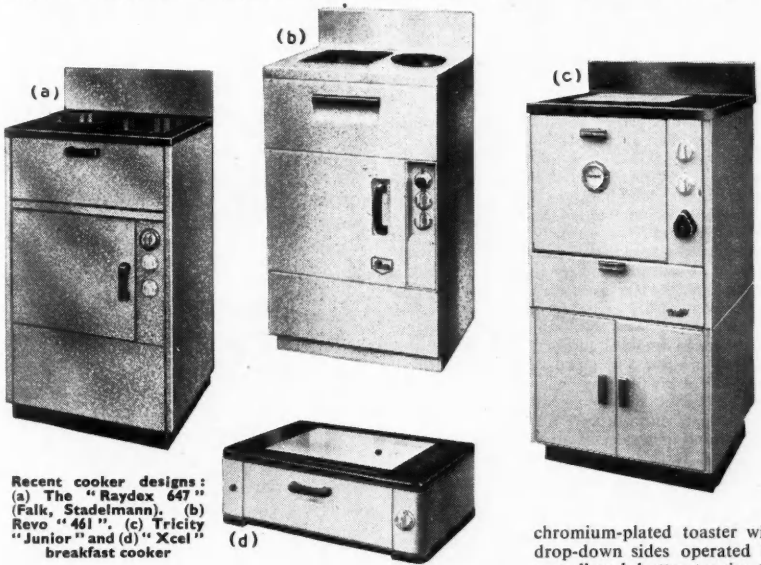
Enfield Cables, Ltd. (Stand 66).—Besides compression cables for 264, 132 and 66 kV, a fine wire drawing machine is shown actually producing copper wire. Part of the basement section of the exhibition hall close to this stand is wired with the company's new "grid suspen-

sion wiring system" of overhead distribution, using self-contained catenary cables and connection boxes.

English Electric Co., Ltd. (Stand 3).—Two "Ritemp" cookers, one a cabinet model, are fitted with hotplates with infinitely variable simmer control and with a rapid boost heater for quick heating. An all-aluminium cooker, built for the National Housing Drive is also featured. A "Perspex" exhibition model washing machine and a water circulator in a cut-away tank effectively demonstrate points of design. A modern reflector fire in chromium and cream, a plate warmer of heat resisting glass and house service meters are other exhibits.

Ferranti, Ltd. (Stand 50).—Various fires include the new "Sunera" models with chromium and "Solium" reflectors and space heaters in both surface and flush types specially designed for schools. An automatic alarm clock with 24-hour alarm setting and automatic re-set is among a new range of electric clocks, and both thermal storage and immersion type water heaters are on view. Of special interest among the house service meters exhibited on the stand is the micro-gap type prepayment switch.

H. Fisher (Oldham), Ltd. (Stand 43).—Two new items are a drying cabinet in cream enamelled aluminium and a streamlined chromium-plated toaster with drop-down sides operated by a small push-button turning the bread automatically. In addition there is a full range of immersion heaters and storage heaters among which is included the dual purpose 20-gal. unit.



Recent cooker designs: (a) The "Raydex 647" (Falk, Stadelmann). (b) Revo "461". (c) Tricity "Junior" and (d) "Xcel" breakfast cooker

Falco Electrical Appliances, Ltd. (Stand 44).—The new streamlined cooker has a spring controlled drop-down oven door and is available with a utility drawer for storing cooking implements. A new reflector fire of attractive design is obtainable in cream, green or beige finish. The company's heat controlled electric iron is well balanced and is fitted with a double thumb-rest.

Falk, Stadelmann & Co., Ltd. (Stand 6).—The new "Raydex" 647 cooker has been specially designed to meet N.H.D. requirements. All hob components are readily removable for cleaning, and maximum hot-cupboard space is provided. The cooker can be supplied as a free standing model or as a plinth model. Other exhibits are water heaters, immersion heaters, "Raydex Sunray" reflector fires, streamlined electric irons, electric kettles and unit heaters.

General Accessories, Ltd. (Stand 20).—"Surrey" micro-break switches and "Genacco" switches and switch-sockets are accompanied by the "Clix" foot press switch and a model of a 13-A flat-pin switch outlet designed to conform to the new British Standard Specification.

General Electric Co., Ltd. (Stand 2).—One of the new DC.113 electric cookers on view is specially fitted with 8-in. radiant plate, "Simmerstat" and circuit fuses, another having the new standard G.E.C. six-heat simmering control. Two reflector fires incorporate a new scientifically designed multi-parabola wide-angle reflector. An electric toaster takes two pieces of bread

simultaneously and automatically reverses them. A 3-pint electric kettle is one of a range in polished aluminium and chromium-plated copper, the same finishes being available for a new coffee percolator. A warming plate is fitted with an indicator lamp and both the new electric irons shown are streamlined. The new cleaner has a carpet nozzle which automatically adjusts itself to suit the thickness of the pile.

Gillott Electro-Steam Cookers, Ltd. (Stand 40).—In the final design models of the prototype electro-steam cookers exhibited at Blackpool last year the appearance has been re-styled and has now been approved by the Council of Industrial Design.

Hague & McKenzie, Ltd. (Stand 61).—An extended range of " Pyramid " cooking utensils includes larger size stewpans, kettles and frying pans, maslin kettles, preserving pans, porringers, egg poachers, etc. New heavy-duty utensils have welded handles.

Heatrae, Ltd. (Stand 69).—The new " Heatrae Jet " embodies an entirely new conception of electric water heating for use in small flats and houses. A typical flat-shaped cistern type heater and a flat-backed 1½-gal. unit, auto-circulators and immersion heaters with removable cores are also on view. An immersion heater with a flameproof terminal box is available for industrial purposes. An electric heater of low loading has been specially designed for airing cupboards, and there is a combined air warmer and towel rail for bathrooms, etc. For canteen and restaurant use a rapid semi-automatic water boiler and a hot water urn are constructed throughout in monel metal. An oil-jacketed tank used for applying BX dip (a plastic covering to prevent rusting and corrosion of machine finished parts) is a further exhibit.

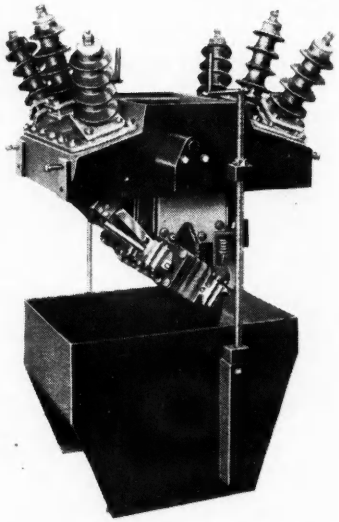
H.M.V. Household Appliances (Stand 26).—Up-to-date heating apparatus is represented by the " Bruton," " Welbeck " and " Portman " reflector fires, the " Cavendish " convector heater and the " Belgrave " bar-type panel fire. The " Maddox " and " Bentinck " are unconventional kettles. Both appearance and functional efficiency have been taken into consideration in the " No. 4A" controlled heat iron.

Hoover, Ltd. (Stand 29).—Fractional-h.p. motors accompany a display of vacuum cleaners of the standard, " Junior," cylindrical and " Dustette " types.

Hotpoint Electric Appliance Co., Ltd. (Stand 12).—A washing machine (fitted with an emptying pump), an improved portable and collapsible clothes airer, a table ironer and a prototype reversible and collapsible ironing unit are items of home laundry equipment. Radiant boiling plates, a breakfast cooker, immersion heaters, a vacuum cleaner, automatic irons, fires, a toaster and a kettle are other examples of the company's appliances.

Jackson Electric Stove Co., Ltd. (Stand 7).—Three models of the new " Series IV Cleanline " electric cookers meet the needs of 3-6, 6-9 and 7-10 persons respectively. The 192J has a single hot-plate, the 193 J is similar but with two hot-plates, while the 194 J, also with two hot-plates, has an extra-large oven. All ovens are thermostatically controlled and " Simmerstats " are fitted when required. Component parts of all cookers are interchangeable. A modified Backer-Jackson radiant boiling plate and a 10-gal. wash-boiler are also displayed.

Johnson & Phillips, Ltd. (Stand 36).—Set against a background depicting rural distribution, a " Type SE " pole-mounting circuit breaker provides a working example of modern development in overhead-line equipment.



J. & P. " Type SE " pole-mounting circuit breaker

Special features of this unit are the employment of a single break, the use of a side blast arc control device, and the incorporation of auto-reclose mechanism. Among other equipment are a transformer and the " D " switch-fuse.

Measurement, Ltd. (Stand 13).—Demonstrations are given of the telewattmeter transmitter. The proportional d.c. principle is employed and special advantages claimed are high accuracy independent of changes in resistance of pilots or external circuit, and entire absence of contacts, springs, motors, rheostats, rectifiers or photo-cells. Other novel instruments are a d.c. potential balancer and an integrating converter by means of which the wattmeter indications which have been transmitted over pilots can be converted into kWh. The company also produces a transmitter operating on the variable-frequency principle. House service meters

incorporate many improvements in design. A model shows how an "Actadis" ripple control installation operates.

Metropolitan-Vickers Electrical Co., Ltd. (Stand 25).—This exhibit covers the improved "Ripplay" equipment for the centralized control of off-peak loads, a new type of calcium chloride breather for transformers, the latest designs of street-lighting lanterns (the "Trafford" and "Poplar" types for Group A roadways and the "Welwyn" and "Ryde" types for Group B roadways), "Paradyne" portable welding sets and welding electrodes, and "Red Ring" boiling plates and grill boilers.

Moffats, Ltd. (Stand 11).—Models 42S, 43S and 31SG cookers are shown in colour finishes with models 42S and 43S in dapple grey to meet N.H.D. specifications. The "Handichef" is a modern version of the breakfast cooker.

Parnall (Yate), Ltd. (Stand 19).—The Parnall aluminium electric cooker is on circuit to demonstrate the special attention paid to insulation and lagging. Other features emphasized are the new heat-resisting resilient enamel applied to the exterior and the instantly removable cast aluminium hob, which is slightly fluted to minimize wear and eliminate scratching and chipping.

Revo Electric Co., Ltd. (Stand 5).—The "R.461" cooker introduced in its prototype form at the 1946 convention has now undergone minor modifications and production will shortly commence. Main features are the clean lines of front and sides and the absence of external hinges, projecting ledges and fixing screws. Handles on the hot-cupboard and oven doors and the switches are all recessed. An alternative model can be provided with separate grill in addition to two plates, and "Superspeed" or "Rediheat" plates can be fitted. To facilitate renewal the fuses have been accommodated in the switches. A new 4-pt safety kettle and the latest fires and heat controlled irons are also on show, together with consumers' service units, cooker control units, fans and "Trufolite" fluorescent reflectors.

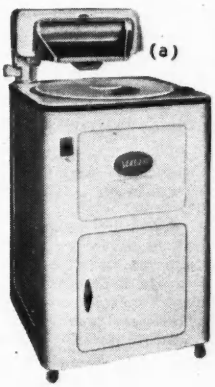
A. Reyrolle & Co., Ltd. (Stand 33).—Two complete switchgear panels are on view, one of type C6T for high-voltage service and the other of type S22A for medium-voltage service. A demonstration panel shows the operating principles of the newly developed mono-bias-busbar-zone-protection system.

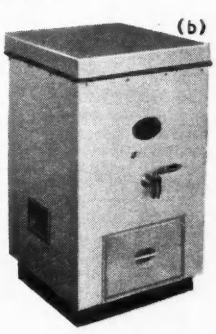
Rheostatic Co., Ltd. (Stand 54).—Sectional models demonstrate the operation of the "Satchwell CS" domestic electric cooker oven thermostat, water heater thermostats and space heating controls.

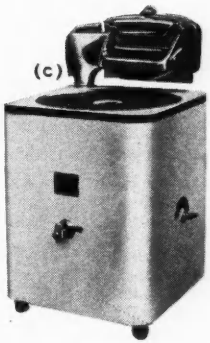
Sangamo Weston, Ltd. (Stand 35).—Among laboratory standard instruments the new Weston 12-in. moving-coil and dynamometer units have knife-edge pointers, anti-parallax mirrors, vernier type scales, spirit levels, levelling feet and thermometers. Sub-standard instruments, moving-coil relays, a new frequency meter, a new portable test set, temperature compensated watt-hour meters and synchronous motor-driven time switches are other exhibits.

Santon, Ltd. (Stand 39).—On this stand is a comprehensive range of domestic thermal storage water heaters, domestic immersion heaters and heavy-duty industrial type immersion heaters including units for degreasing equipments used for cooker maintenance. Of particular interest is an improved automatic electric water boiler. A new rotary switch for cookers and a range of pressed steel cooker units and household service units complete the display.

Siemens Electric Lamps & Supplies, Ltd. (Stand 1).—For "Group A" street lighting three lanterns are being shown, the "Weston-Sieray" side-entry bowl refractor lantern, the "Dilux" lantern incorporating a new prismatic glass dish refractor, and the "Halton-Sieray" of the bowl refractor type. "Group B" fittings are the "Newton-Sieray" Minor and the "Marton-Sieray" lantern. Various "Sieray" fluorescent fittings include commercial types. With an old cable recovered after thirty-six



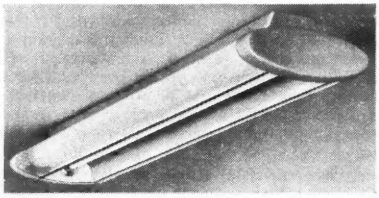




(a) "Servis" washer (Wilkins & Mitchell). (b) South Wales Switchgear square wash-boiler. (c) "Versco" washing machine (Universal Boilers & Engineering Co.)

years' continuous service is a sample of the most modern submarine 33-kV cable. House service cut-outs, the "Londonderry" combined house service unit, an E.D.A. consumer's unit, earth leakage circuit breakers and electricity meters are also represented.

Simplex Electric Co., Ltd. (Stand 14).—The "Creda" exhibit includes the new domestic cookers, the new "Halo" iron, the "Brentwood" convector, the new hand dryer and typical water heating equipment, among the last-mentioned being a double-purpose unit cut in section to show internal construction. Besides examples of the new Simplex "Regent" range of switchgear, there are new street lighting lanterns, including the "Refrax," totally enclosed and dustproof unit.



"Atlas" triple-tube 30-W fluorescent unit

Smith Meters, Ltd. (Stand 51).—Although the house service meters shown are in general identical with those marketed before the war, the moving element has been re-designed inasmuch that the worm is cut in the spindle and not friction tight, and renewal of bearings has been simplified. A modified design is being brought out to conform to the anticipated modifications to B.S.S. No. 37 and to incorporate the required standardized dimensions.

South Wales Switchgear, Ltd. (Stand 52).—The latest product is the "Home Laundry Unit" built up from the company's standard square wash-boiler. The cast aluminium top plate has a wringer standard, and a vitreous enamelled table top covers the entire unit. The base incorporates a cupboard for the wringer. The unit is fitted with a hand-operated agitator. A standard air-insulated, 11-kV, 400-A, 150-MVA ring-main unit, 3-kW immersion heaters and round wash-boilers are also displayed.

Standard Telephones & Cables, Ltd. (Stand 8).—Particular attention is drawn to the d.c. bias system for the remote control of street lighting, etc. Electric power cable and accessories for power installations are represented by examples of paper-insulated cables, styrenated paper terminations, styrene joints and oil-impregnated paper condenser cones.

Sunvic Controls, Ltd. (Stand 45).—The "Simmerstat," besides regulating the average power input to a hot-plate at any desired level from zero to full load, also automatically compensates for voltage fluctuation up to $\pm$ 20 per cent. The Sunvic water heater thermostat has terminal pillars integral with the brass pressings which form the switch mechanism.

Thorn Electrical Industries, Ltd. (Stand 56).—This stand exhibits "Atlas" incandescent and fluorescent lamps, as well as lighting fittings including attractive new types of 80-W and 30-W fluorescent units, some with fluted "Perspex" diffusing covers. Various special types of incandescent lamps and precision resistances are also shown along with the "Mary Ann" automatic electric iron and the "Mary Ann Bedalax" vacuum cleaner.

T.M.C.-Harwell (Sales), Ltd. (Stand 63).—"Temco" synchronous electric clocks are accompanied by a working model of the movement, features of which are its oil reservoir and worm drive. Wiring accessories include switches, switch-plugs, junction boxes and connectors for domestic appliances. A special type of connector incorporates a d.p. switch.

Tricity Cookers, Ltd. (Stand 10).—One new general purpose cooker is fitted with grill-boiler and 8-in. hot-plate, while another with an additional 6½-in. hot-plate may be fitted with "Lokost" 10-heat control on all elements. The new "Junior" cooker has provision for attachment of an additional 1,000-W hot-plate.

Universal Boilers & Engineering Co., Ltd. (Stand 62).—The most interesting product shown is the "Versco" flush action washing machine. Another machine, the "Major," is electrically heated and hand operated with easy-to-work suction tumbler agitator. Wash-boilers include one square ("De Luxe") and two round types.

Venner Time Switches, Ltd. (Stand 34).—The company's process timer is finding an increasing demand for the control of various industrial processes, while the cyclo hour meter also has a wide application in the industrial field. Meters, time switches, clocks, time-delay relays and the pilot wire relay system are other items.

J. & H. Walter, Ltd. (Stand 60).—The "Walter" no-cord electric iron and board has been designed to operate without a flex.

Walter no-cord electric iron

Wilkins & Mitchell, Ltd. (Stand 65).—This company is exhibiting the "Servis" electric washing machine.

I.M.E.A. Annual Report

Future of Association Being Considered

THE annual report of the I.M.E.A. Council for 1946-47, the fifty-second year, shows the membership to be 346, a reduction of two occasioned by the North of Scotland Hydro-electric Board taking over the Wick undertaking and the resignation of the Stanley U.D.C.

The report records outstanding events in connection with the passage through Parliament of the Electricity Bill and expresses the I.M.E.A.'s intention to continue to press for the acceptance of certain amendments.

The Generation Committee has prepared a model specification for the design and performance of cooling towers, which it is hoped to issue in the near future. The Electricity Commissioners have been strongly urged to expedite alleviation of the shortage of lead for cable sheathing and the Ministry of Supply has assured the Cable Makers' Association that its claims shall have the fullest consideration when additional supplies become available. The Advisory Committee mentioned in last year's report has submitted its observations on the Treasury's memorandum relative to the payment to public utilities of war damage claims and is now awaiting results, but the Bill proposed in this connection will not now be introduced during the present Parliamentary session.

Broadcasting Over Mains

With reference to the negotiations last year between electricity undertakings and the G.P.O. concerning the use of power mains for wire broadcasting, the I.M.E.A. suggested that additional powers be sought to enable authorized undertakers to operate such services themselves and recommended the undertakers meanwhile not to enter into new obligations with re-diffusion companies. The G.P.O. is to conduct research into the technical aspects of the subject and matters arising therefrom are being considered by a sub-committee of the I.M.E.A.

The Council has endorsed the request made to the Electricity Commissioners by the Electricity Supply Joint Committee that one or two radio-frequency bands should be reserved for possible use of short-wave (short range) wireless communication by electricity undertakings. A memorandum is to be submitted to members in the near future on matters relevant to remote control by currents superimposed on power mains.

Representations have been made to the appropriate Government Departments, additional to supporting those made by the E.D.A. and B.E.A.M.A., concerning the lack of domestic apparatus; also strong protests have been made by both the I.M.E.A. and the E.D.A. about the re-imposition of the purchase tax on certain appliances.

The poor quality of domestic apparatus has been specially considered by the I.M.E.A.-B.E.A.M.A. Joint Committee and the manufacturers have taken up this matter strongly with appropriate Government Departments.

A revised edition of the booklet of instructions on the direct-on starting of a.c. motors is to be issued in the near future. Tenders for electrical plant, particularly in respect of prices, are still under consideration.

The I.M.E.A. has withdrawn from the National Committee on Statutory Wiring Regulations and Registrations; it is said that no good purpose can be served by continuing its representation, since the Ministers of Works and of Fuel and Power are not prepared to recommend legislation for the compulsory registration of electrical contractors and operatives.

The Council has also withdrawn its support of the joint liaison committee between the electricity supply industry and the National Farmers' Union, the reason being its disagreement with some of the proposals propounded in the N.F.U. scheme.

The report observes that the provisions of the Electricity Bill will not allow the I.M.E.A., as at present constituted, to function under the nationalized structure of the industry. The Council is therefore earnestly considering recommendations to be submitted, in due time, to members in general meeting for preserving the usefulness of the Association.

The accounts show that expenditure exceeded by £1,448 the income of £15,865, compared with £13,998 last year. The balance sheet indicates assets valued at £24,154.

The report concludes with a brief commentary on the activities of the Electricity Supply Joint Committee, the Conjoint Conference of Public Utility Associations, the E.D.A., the E.R.A. and the E.A.W., on all of which the I.M.E.A. is represented.

Belgian Power Supply

The 1946 report for last year of the Société de l'Union des Centrales Electriques de Liège-Namur-Luxembourg ("Linalux") states that to meet the growing demand all the company's generating resources are being operated at maximum capacity. Much of the plant, however, has been prematurely worn out owing to insufficient repairs and renewals during the war. Supplies drawn from German networks have also caused trouble owing to voltage and frequency irregularities. To cope with the present difficulties the Belgian Federation Professionnelle des Producteurs et Distributeurs d'Electricité has recently formed a special Comité des Restrictions.

Views on the News

Reflections on Current Topics

IN its new series of educational films, of which I had a pre-view a few days ago, E.D.A. has undertaken the "delightful task—to rear the tender thought, to teach the young idea" how to associate efficient and imaginative film shooting with electricity. Visual aid to oral teaching is of importance in many ways and the lecture notes accompanying the films ought to appeal to young people of from eleven to fifteen years of age for whom, I understand, they are primarily intended. These films will, I hope, be regarded by educational authorities here as a powerful aid in meeting the friendly challenge in this sphere offered by New Zealand, where more films are shown in schools than in places of entertainment.

* * *

Authoritative backing exists for the suggestion, made by Mr. Herbert Morrison at the hundredth anniversary of the birth of the Institution of Mechanical Engineers, that this country has been better at fundamental than applied research. Too often has the credit as well as the material benefits due to ideas that originated here gone to other nations. We are no longer rich enough to allow this to happen. There seems to be something of a paradox about this shortcoming, since at the other and more practical end of the scale British engineers have always been in the front rank. The gap between the two, once recognized as such, can be filled. Indeed it has already been largely filled by the establishment of laboratories as adjuncts to manufacturers' works, which enables close liaison to be maintained between research, development and production stages.

* * *

The late Dr. S. Z. de Ferranti foresaw the time when electricity would be supplied "on tap" as water is. Something like this has already been seen at some hutted camps for which the Swale (Kent) R.D.C. is responsible. It was reported at a Council meeting that at one camp, during the first quarter of the year, the cost of electricity consumed worked out at 26s. a hut per week, but under the threat of an increase in the rent this was got down to about 17s. a week. It is fair to say, however, that it was discovered that "certain military plant" on adjoining property had managed to obtain a supply through the Council's meter. A councillor said that the occupants of the camp "must have gone about buying up every sort of electrical contrivance they could lay their hands on." It is certainly easy to become "electrically minded" in such circumstances.

* * *

Too many industrial workers have been given a wrong impression of those who invest in the companies by which they are employed, and it was a good idea of the B.I. Callender's directors to invite their stockholders to the Prescot works on the occasion of the company's annual meeting. No doubt many of the employees were astonished to find that the "bloated capitalists" which they had visualized were quite ordinary decent human beings. And, conversely, some stockholders were probably equally disillusioned when they discovered that the men and women in the factories were not the "subversive types" which they imagined.

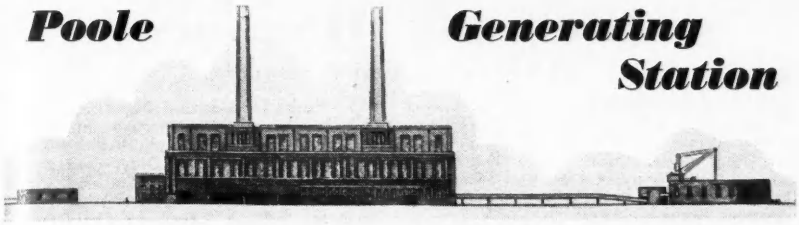
* * *

An ingenious (although, I fear, not very effective) attempt to solve the problem of giving a single-phase supply from a three-phase system was recently brought to my notice. A supply undertaking abroad had refused to connect a welding transformer for fear of unbalancing the distributors. A compromise was eventually reached by which the welding transformer was connected across two phases and a condenser between the remaining phase and neutral. Ammeters then indicated load on all three phases and everybody was satisfied. I have not heard whether subsequent voltage irregularities suggested the possibility of there being something "phoney" about the phase relationships.

* * *

Last week the South East England Area of the Electrical Association for Women arranged a series of talks and demonstrations on various aspects of fuel economy. The importance of this subject at the present time is apparent to all, but I think that the organizers went a bit far in calling the conference a "Fuel Economy *Festival*." Surely it was excessively glorying in our infirmity.—**REFLECTOR.**

Poole Generating Station



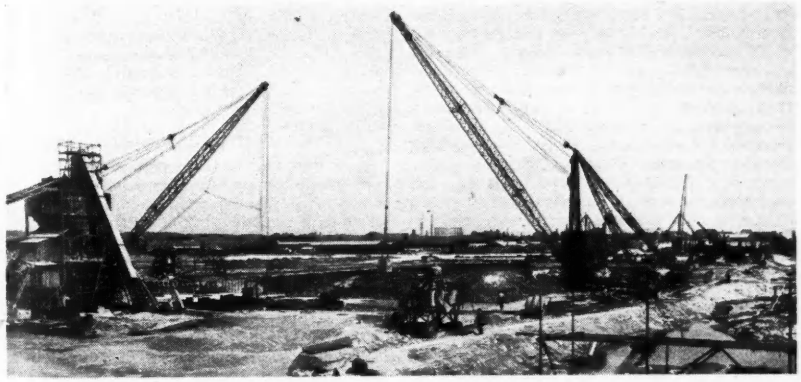
Brief Details of the New Plant

AS we mention in our notes on the I.M.E.A. Convention programme (page 1008), delegates will be afforded next week an opportunity of visiting the site at Hamworthy, Dorset, of the projected generating station of the Bournemouth & Poole Electricity Supply Co., Ltd. The provision of foundations for the 200,000 kW of plant to be ultimately installed has entailed the excavation of mud to a depth of 16 ft over an area of 500 by 250 ft. Wrecks of many small vessels, most of which had lain in the mud of Poole Harbour for a great many years, have had to be removed at considerable cost. The site was also honeycombed with deep creeks which were filled with water at all tides.

The initial installation will comprise three 50,000-kW 3,000-r.p.m. turbo-alternators (two Metropolitan-Vickers and one Parsons sets) and six pulverized-fuel-fired boilers (International Combustion, Ltd.), having a maximum evaporative capacity of 300,000 lb per hr and individually associated with electrostatic dust precipitators. Designed steam conditions at the turbine stop valve are 900 lb per sq in. and 925 deg F. Switching will be at 132 kV. The two chimneys which are to be erected will be 310 ft above ground level.

Circulating water is to be taken from a deep-water channel adjacent to the wharf at which sea-borne coal will be delivered. Ash and dust will be barged out to sea or pumped on to the foreshore.

Mr. W. J. H. Wood (joint general manager of the company) is responsible for the design of the station with Merz & McLellan as consulting engineers and Mott, Hay & Anderson as consultants for the civil engineering work. The heading block shows the final appearance of the steel-framed station building with self-supporting brick walls as envisaged by the architect, Mr. Sydney Jupp, F.R.I.B.A., and the photograph below indicates the present stage of the foundation work which is being carried out by Sir Robert McAlpine & Sons, Ltd.



Present state of foundation work at the station site

Birthday Honours

Awards to Electrical Personalities

IN the King's Birthday Honours the leading electrical name is that of **Miss Caroline Haslett,** who is promoted to be a Dame Commander of the Order of the British Empire (D.B.E.) for services to the Board of Trade and Ministry of Labour. The **Hon. C. J. H. Campbell,** managing director, Marconi Radio Telegraph Co. of Egypt, is made a Knight Commander of the Order (K.B.E.).

Among those appointed Commanders (C.B.E.) are Mr. J. E. C. Bailey, managing director, Baird & Tatlock, Ltd.; Mr. O. F. Brown, assistant secretary, D.S.I.R.; Alderman C. B. Chartres, M.I.E.E., vice-chairman, Agricultural Machinery Development Board; Mr. F. Edmond, member, Safety in Mines Research Board; and Mr. H. L. Kirke, M.I.E.E., head of the B.B.C. Research Department. Mr. C. F. Booth, M.I.E.E., assistant staff officer, G.P.O., is made an Officer of the Order (O.B.E.) as are Mr. T. D. Boldy, Burma Public Works Department (Electrical Branch); Mr. B. F. Browne, M.Inst.C.E., M.I.E.E., North-Eastern Regional Gas Officer, Ministry of Fuel and Power; Mr. B. O. Candy, transmission engineer, Standard Telephones & Cables, Ltd.; Mr. L. J. Cheshire, senior engineer, English Electric Co.; Mr. C. F. Dickson (director, Crompton Parkinson, Ltd.), for services as chairman of the Executive Council of Stage Door Canteen, Ltd.; Mr. H. Douglas, financial officer, Electricity Commission; Mr. W. L. Greenwood, personal and contracts manager, Murphy Radio, Ltd.; Lt.-Col. A. T. Harpham, M.I.E.E., Postmaster-General, Southern Rhodesia; Mr. A. C. Knowling, assistant director of telecommunications, Ministry of Civil Aviation; Mr. T. F. Lee, A.M.I.E.E., secretary, Telephone Apparatus Bulk Supply Committee; Alderman C. Saer, vice-chairman, Fleetwood Electricity Committee; Mr. G. Smith, M.I.E.E., superintending engineer, Ministry of Works; Mr. C. E. Strong, M.I.E.E., chief radio engineer, Standard Telephones & Cables, Ltd.; Mr. H. W. Swann, M.I.E.E., senior electrical inspector, Ministry of Labour and National Service; and Mr. W. Wood, signal and telegraph engineer, L.M.S.

New Members of the Order (M.B.E.) are Mr. T. S. Brown, chief draughtsman, Clarke, Chapman & Co.; Major H. Collershaw, executive engineer, Calcutta Telephone District; Mr. A. H. G. Field, assistant engineer (Cardiff), G.P.O.; Mr. W. H. Nicholls, chief electrical engineer, Aldershot District, War Office; Mr. G. S. Preston, Plessey Co., Ltd.; Mr. J. Williams, Standard Telephones & Cables, Ltd.; and Mr. W. E. Willshaw, A.M.I.E.E. (General Electric Co., Ltd.)

Medals of the Order (B.E.M.) are awarded to Mr. J. Cessford (Bruce Peebles & Co., Ltd.), Mr. S. R. Sheldon (Newton Bros. (Derby), Ltd.), and Miss M. M. Wallace (Standard Telephones & Cables, Ltd.).

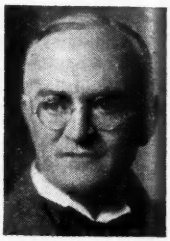
A knighthood is conferred upon Mr. G. S. Maginess, deputy-chairman of Tube Investments, Ltd., and president of the British Employers' Confederation.

Maj. Gen. A. W. Sproull, C.B.E., B.Sc., M.I.E.E., is appointed a Companion of the Order of the Bath (C.B.) and Col. J. E. Swindlehurst, M.I.E.E., R.E., is appointed an O.B.E. (Mil.).

Miss C. Haslett (D.B.E.)

Mr. H. L. Kirke (C.B.E.)

Mr. C. F. Dickson (O.B.E.)



Mr. H. W. Swann (O.B.E.)

Photo-electric Microphotometer

AN experimental model of a new kind of photo-electric microphotometer has recently been twice demonstrated in London. It is capable of depicting on the screen of a cathode-ray oscillograph the variations of transparency along any straight line on a photographic plate and should therefore facilitate many forms of spectrography and also assist physico-chemical and astronomical analysis, etc. The instrument is being developed by Ferranti, Ltd., Crewe Toll, Edinburgh, in extension of principles already fully described elsewhere (Born, Fürth & Pringle, Dept. of Mathematical Physics, Edinburgh University).

PERSONAL and SOCIAL

News of Men and Women of the Industry

IN recognition of his great services to the Institution and to the development of mechanical engineering science and practice, Sir **Leonard Pearce** has been elected an honorary member of the Institution of Mechanical Engineers.

Messrs. **J. S. Pickles** (retiring president), **J. Eccles** (president-elect), **R. Birt** and **J. W. Simpson** (secretary) are to represent the I.M.E.A., by the invitation of the Netherlands National Committee, at the sectional meeting on "Fuel Economy" of the World Power Conference which is to take place at The Hague in Holland in September this year.

Mr. J. A. Sumner, city electrical engineer, and Mr. **W. G. Weston,** chief administrative officer, City of Norwich Electricity Department, have been elected chairman and hon. secretary respectively, of the newly constituted Norwich Group of the Institute of Industrial Administration.

Mr. N. C. Wick, electrical draughtsman with the Gravesend Corporation Electricity Department, has been promoted to the position of chief draughtsman.

Messrs. **F. C. Smith** (works manager), **L. C. Ellis** (chief engineer) and **E. H. Hilton** (secretary) have been elected to the board of the Visco Engineering Co., Ltd.

Mr. H. Shackleton, M.Sc., M.I.E.E., whose appointment as deputy chief engineer and manager at Rochdale we recently announced, was educated at Burnley Grammar School and at Victoria University, Manchester. He joined the Manchester Corporation Electricity Department in 1924 as testing assistant and has held the successive appointments of electro-technical assistant, senior electro-technical assistant and (since 1944), electro-technical engineer and personal assistant to the distribution engineer. In September, 1939, he contributed an article to our pages on "Domestic Electrification—A Comparison of Development in Great Britain and the U.S.A." Mr. Shackleton takes up his new duties on July 1st next.

Mr. H. Shackleton

Mr. F. R. Bancroft, for nearly twenty years Midland electrical representative of Falk, Stadelmann & Co., Ltd., has joined the staff of Frank Westerman (Wholesale), Ltd., in a similar capacity. Internal management of the Electrical Department of Frank Westerman (Wholesale), Ltd., is in the hands of **Mr. A. Skidmore,** late of Electrical Components, Ltd., while **Mr. H. Ford,** late of G.E.C. and Crompton Parkinson, continues in his capacity of sales manager.

We had the pleasure of a visit last week from **Mr. Torvald V. Malmstrom,** assistant director of the Royal Academy of Engineering Sciences, Sweden, who was in this country under the auspices of the British Council. Mr. Malmstrom included in his visits the Department of Scientific and Industrial Research, the National Physical Laboratory and the E.R.A. laboratories at Alperton. Mr. Malmstrom is an electrical engineer on the staff of the Swedish Association of Electricity Undertakings and the Electrical Development Association of Sweden and edits the journals of these bodies. In this capacity he visited the British Electrical Development Association and the Electrical Association for Women and inspected typical examples of electrically equipped houses, flats and farms in this country.

Mr. T. V. Malmstrom

Mr. G. D. Johnstone of Cheltenham, has been re-elected chairman of the English Bridge Union. Mr. Johnstone is general manager of the West Gloucestershire Power Co., Ltd.

Mr. R. J. Allaway, who was with the General Electric Co., Ltd., for seventeen years, has been appointed general manager of Wholesale Electrical Components, Ltd., and **Mr. A. Ling,** formerly with the British Thomson-Houston Co., Ltd., and the Stearn Electric Co., Ltd., has joined the company's sales organization. **Mr. A. B. L. Richmond** is managing director of the company.

Mr. F. Horn, on reaching the retiring age at the end of June, is relinquishing his position as intelligence officer and manager of the Special Products Department of the British Aluminium Co., Ltd. He is being retained in a consultative capacity until the end of the year. **Mr. L. V. Chilton,** M.A. (Cantab.), has been appointed manager of the Intelligence Department, and **Miss W. Lewis,** B.Sc., information officer. Responsibility for the sale of special products is being transferred to the sales division under **Mr. R. M. Warrington. Mr. S. F. Derbyshire,** manager of the Alumina Department of the production division, will be responsible for technical matters affecting special products.

Mr. W. M. McKenzie, assistant secretary to Bruce Peebles & Co., Ltd., has been appointed secretary and chief accountant of the company.

Sir Edward Appleton, according to *Reuter*, has been awarded the Cross of Freedom by King Haakon of Norway for outstanding services to Norway's cause during the war.

The North-East Coast Section of the Electrical Wholesalers' Federation are the first holders of a rose bowl, the gift of Mr. W. C. Yuille of Glasgow, and awarded to the section which heads the donation list of the Electrical Industries Benevolent Association. The bowl was presented in Newcastle to **Mr. W. C. Gladson,** chairman of the North-East Section by Mr. W. Hall Marr, president of the Federation.

The North Wales Power Co., Ltd., gave its employees an outing on June 13th. The principal office and district offices were closed for normal business, and a party of 650 visited Llandudno, the programme including a steamer trip on the *St. Trillo* and an evening entertainment at the Pier Pavilion.

Obituary

Mr. P. E. Newnam.—We regret to record the sudden death, on May 30th, of Mr. Paul Edward Newnam, A.M.I.E.E., at his home in Eltham. He was fifty-four years of age. Mr. Newnam was a specialist engineer on the staff of the Steam Turbine Department of the English Electric Co., Ltd., at Queen's House, London. He was born in Buckinghamshire, educated at Carlisle Grammar School and apprenticed to C. A. Parsons & Co., Ltd. During the 1914-18 war, he served in the East Yorkshire Regiment and the Tyne Electrical Engineers.

The late Mr. P. E. Newnam

After holding a number of positions on the staff of C. A. Parsons & Co., he became manager of their London office in 1934. During the 1939-45 war he spent some time in the service of the Ministry of Works, and joined the English Electric Company in 1944.

Mrs. A. Home-Morton.—We regret to learn of the death, on June 8th, of Mrs. Roberta Forrest Home-Morton, the widow of Mr. Andrew Home-Morton, former secretary of the Incorporated Association of Electric Power Companies, who died in 1943.

Mr. O. C. Jones.—The death occurred on June 3rd, at the age of seventy-four, of Mr. Oswald Charles Jones, A.M.I.E.E., principal of the firm of Oswald Jones & Co., electrical contractors, Maidstone, which he founded over forty years ago.

Wills.—Mr. H. S. Craig, of Hornsey, electrical engineer, who died on March 24th, left £3,260 gross, with net personalty £3,177.

Mr. Edward John Wade, M.I.E.E., who died on January 9th last, left £22,577 gross, with net personalty £22,528 (duty paid £2,713). After various bequests he left the residue to the Benevolent Fund of the Institution of Electrical Engineers.

Mr. L. A. Booth, sales director of Enfield Cables, Ltd., and formerly London manager of Johnson & Phillips, Ltd., who died on January 6th, left £9,237 gross, with net personalty £8,709.

Australian Notes

From Our Australian Correspondent

Mr. Cosgrove, Premier of Tasmania, is opposed to a proposal that his State should supply hydro-electric power to mainland States by undersea transmission. He says that the State is already committed to the continuous employment of 3,000 men for the next ten years to carry out its present development programme, and all the State's power is needed for the number of industries which have been attracted by cheap rates and non-dependence on coal supplies. He also maintains that submarine transmission of power across Bass Strait would not be economical.

Mr. Playford, Premier of South Australia says that within a comparatively short time his State's electric power will be generated from coal obtained within the State—at Leigh Creek. All States are endeavouring to make themselves independent of New South Wales coal, the supply of which is hindered by almost continual industrial troubles.

Endeavours are being made to put an end to industrial disputes at the Bunnerong power station, and the Sydney County Council's industrial officer (Mr. G. B. Barton) says that it is essential that the present deadlock between the Council and its employees shall be ended so that vital maintenance work can be carried out.

The Western Australian Government Tender Board has accepted tenders totalling £300,000 for the supply of generating equipment for the Collie power station. Most of this equipment will come from Great Britain, and it is expected that the new plant will be running by 1950. A new switchboard for the burnt-out Derby power station was recently flown from Melbourne and it is hoped that the power house will be in operation again in July.

The net revenue obtained by the Western Australian Government Electricity Supply for the year ended June 30th, 1946, shows a substantial decline, being only £18,324 against £97,689 in the previous year. Earnings rose from £575,742 to £578,149, but working expenses jumped from £478,053 to £559,825.

CORRESPONDENCE

Letters should bear the writers' names and addresses, not necessarily for publication. Responsibility cannot be accepted for correspondents' opinions.

Acidity and Sludge

REGARDING the article by Mr. J. A. Clegg in your issue of June 6th, it is incorrect to assume, from the experimental data obtained, that the effect of moisture on the formation of acidity and sludge in transformer oil can be ignored. When a tank lid is attacked by volatile acids the exposed surface area is increased so that, if there is moisture present, the formation of rust is accelerated. In due course particles of rust fall from the lid into the oil and, in themselves, act as catalysts.

Where a transformer tank is not fitted with a conservator the removal of the volatile acids may be expedited by "double-venting." These vents are placed in the lid and in the side of the tank above the oil level. If this principle is adopted due care must be taken, as the author states, to ensure that the dielectric strength of the oil is not impaired.

In addition to shot-blasting the inside of the tank and cover, any exposed surface above oil should, in my opinion, be treated with an acid-resisting paint. I should like to congratulate the author on the form and clarity of his article.

Esher. H. E. FORREST.

WITH reference to Mr. Clegg's article, I wish to challenge the statement that moisture has little effect on the formation of acid. This is not the general experience either of practical engineers or investigators in the laboratory and unless the author carried out far more complete experiments than is suggested by the article, the statement must be characterized as very loose.

G. O. CASTELL, M.I.E.E.

Walton-on-Thames.

[Mr. J. A. Clegg replies: "In a short article it was impossible to give a full description of the wide range of tests made. It was not, however, suggested that the tests made were sufficient to give quantitative evidence of the effect of moisture on acidification; they indicated rather that the catalytic action was not of the same order as that of other material used in transformer manufacture. To pursue these tests further would have entailed considerable experiment, unjustified from the point of view of a transformer manufacturer seeking practical remedies, since it is an essential of good transformer practice to eliminate moisture both in manufacture and in use. Your correspondent's remarks would have been more constructive had he made specific reference to the experimental work on which he bases his remarks." Editors, *Electrical Review.*]

Earthing Conductors

WITH reference to Mr. Henry Browne's letter in your issue on June 6th, I consider the measures he advocates rather extreme and unnecessary. Although the cost may be small in the case of one or two motors, such a project on a large installation would hardly be practicable.

My experience is that for all practical purposes, particularly maintenance, it is sufficient to run the earthing conductor externally to the flexible conduit, the advantages being that it is open for inspection and testing, without the necessity of disturbing other parts of the apparatus.

As to the possibility of earth wires breaking, surely under an efficient system of planned maintenance, such defects would not arise.

Seascale, Cumberland. W. NATTON.

Radio Interference

IN "Reflector's" notes in your issue of April 25th, the remarks of the secretary of a local amateur radio society were quoted from a Blackpool paper. In brief, he stated that 95 per cent of the interference came from electric bed warmers, whereas your editorial questioned this fact and suggested that vacuum cleaners headed the list.

Statistics provided from time to time by the Radio Branch of the Post Office Engineering Department which are based on actual complaints received by them, show clearly that vacuum cleaners do not cause the greatest interference as has been suggested, and the observation of the secretary of the Radio Society to the effect that electric bed warmers are the chief offenders is confirmed.

Recent statistics compiled by the Post Office Engineering Department show that vacuum cleaners represent only 4·5 per cent of the complaints caused by domestic appliances which is indeed a comparatively small percentage, whereas electric bed warmers represent 41 per cent in the same group. Other items higher on the list than vacuum cleaners are hair-dryers, refrigerators and sewing machines.

London. A. MCDONALD, M.A., A.M.I.E.E.

Demonstrators' Salaries

A MINIMUM scale of salaries for women engaged in demonstration and allied work in electricity showrooms has been approved by the British Electrical Development Association and is recommended to all electricity supply undertakings for adoption. For a manager of a showroom serving an area in which up to 25 million kWh a year is sold (Grade 1) the recommended salary is £378/423; for an area in which over 25 million kWh is sold the rate is £468/513. Grade 2, electrical housecraft adviser at central showroom, receives £329/374 and £408/453 respectively, while Grade 3, demonstrator, gets £304/349 and £378/423 respectively.

For " assistant demonstrator " there are four rates irrespective of size of undertaking. Grade 4, those having had a three years' domestic science training with an approved certificate, including electrical housecraft, get £279/324; Grade 4 (*a*) three years' training without certificate, £254/299; Grade 4 (*b*), two years' training with certificate, including electrical housecraft, £230/325; 4 (*c*) two years' training without electrical housecraft, £205/300.

The salaries include cost-of-living bonuses adjusted up to December 31st last. An extra payment of 5 per cent is recommended for persons employed in the Greater London area. It is not proposed that existing demonstration staffs should be disqualified from receiving payment on a particular scale because they do not possess the approved certificate, but new entrants should be appointed from those selected from Grade 4 employees with the necessary qualifications.

The scheme has been worked out by an informal committee consisting of Miss Haslett, Mr. F. Newey and Mr. H. J. Randall, in consultation with Sir William Walker.

Stockholders Visit Factory

UPON the occasion of the annual general meeting at Liverpool of B.I. Callender's Cables, Ltd., the stockholders were invited to visit the local factories of the company and more than 500 were transported by special coaches to the Prescot works.

In the course of a speech Sir Alexander Roger (the chairman) expressed gratification at the large number of stockholders present and said that it showed they had a real interest in the company in which their money was invested. He stressed the " humanizing " influence which was so valuable in concerns such as theirs and said he felt sure that the ideas of such visits could be copied with advantage by many firms in every industry throughout the country. A cold lunch was served in a marquee while the firm's silver band played.

Stockholders were then taken round the factory by members of the staff in groups. For many of them it was their first company meeting and for many of the employees it was their first sight of a shareholder. Both sides were pleased with the introduction. After touring the 100-acre factory, including the copper refinery, where more than 8,500 workers are employed, the stockholders had tea and left the works for Liverpool in a special train.

Future Exhibitions

Engineering and Marine

THIS year's Engineering and Marine Exhibition, which is to be held in London from August 28th to September 13th at Olympia will occupy both the Grand and National Halls with their respective galleries, representing a space increase of some 45 per cent by comparison with the 1937 show. F. W. Bridges & Co., Ltd., the organizers, have adopted a grouped lay-out as before, including foundry trades and welding sections, while a new section will contain plant for electricity generation, transformation, distribution and utilization and signalling equipment.

Broadcasts on the North American, African, General Overseas and Pacific Services of the B.B.C. have recently been given to publicize the Exhibition. They were in the form of a recorded fifteen-minute discussion between Richard Dimbleby (B.B.C.), chairman, and Messrs. A. W. Berry, director of the British Engineers' Association, B. H. Leeson, director of the British Electrical and Allied Manufacturers' Association, and K. W. Bridges, organizing manager.

" Radiolympia "

Applications for space at the National Radio Exhibition, which is to be held in London from October 1st to 11th this year, have exceeded the space available at Olympia. It has consequently been necessary to rearrange the lay-out of stands in the Grand Hall and also to provide extra stands on the gallery of the National Hall. The adjustments have made available twenty-four centre stands of approximately the same size to cater for the needs of leading firms which have planned large exhibits while a few small stands are still available on the gallery of the other hall. The ballots for stand positions took place on June 4th and 5th, space then being allocated to 175 firms, including 24 in the electronics section of the exhibition.

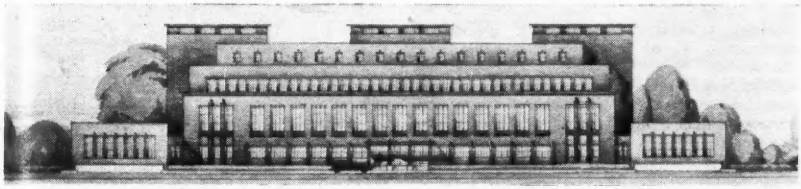
Mechanical Handling

Preliminary arrangements have been completed for a Mechanical Handling Exhibition to be held in the National Hall, Olympia, from July 15th to 21st. This exhibition, the first of its kind, is being promoted and organized, on a non-profit basis, by *Mechanical Handling*. Leading associations in the industry are collaborating with the organizers to make it comprehensive and national in scope and character. While special attention will be directed to the export trade the exhibition will be of outstanding value in the development of home markets.

New E.R.A. Establishment

Architect's Drawing Exhibited

AMONG the exhibits in the Architectural Section of the Royal Academy's Exhibition now being held in London is a drawing by the architect (Mr. H. J. Rowse, F.R.I.B.A.), of the proposed new establishment to be erected at Leatherhead by the British Electrical and Allied Industries Research Association. A photograph of the drawing is reproduced.



Proposed new E.R.A. establishment at Leatherhead

As was indicated at the Association's last annual general meeting, these designs are of a very considerable magnitude, and the erection of the complete establishment is to take place in appropriate stages, spread over a number of years. It will be appreciated that a scheme of this magnitude cannot be envisaged in a detailed final form at this early stage so that the plans now exhibited represent an ultimate aim which may have to be modified later as the scheme develops.

The Council is giving consideration to the substantial financial implications involved. The plans which are being made for realizing the capital required for the scheme essentially involve a direct appeal to the electrical industry for funds, coupled with the expectation of a considerable grant by the Government. Details of these proposals will shortly be put before the industry.

Co-ordination in Ulster

Proposed Joint Electricity Committee

LAST week the Government of Northern Ireland published a White Paper setting out proposals for the central control of electricity supply. It is pointed out that electricity distribution in Belfast and Londonderry is in the hands of the municipal authorities; the immediate requirements of co-ordination in this field would be satisfied by bringing the remainder of the country within the area of the Electricity Board for Northern Ireland. It is proposed to transfer Government-owned generating stations to the Board which will be suitably expanded to cope with its increased responsibilities, including the implementation of the proposals regarding rural electrification.

While leaving the future electrical development in Londonderry in the Corporation's hands, it is stated that substantial economies could be secured by linking the city with the h.v. network served by the Belfast and Ballylumford base-load stations and the Government hopes that the Corporation will come to realize the merits of the proposal.

It is proposed that the primary responsibility for co-ordinating generation should be entrusted to a Joint Electricity Committee, with statutory powers, comprising a chairman appointed by the Ministry of Commerce, the Belfast city electrical engineer and the chief engineer of the Electricity Board. Among the Committee's functions would be to arrange the purchase, sale or exchange of energy with the Eire Electricity Supply Board if this should prove desirable.

The setting-up of an Electricity Commission to advise the Minister on technical questions is considered "undesirable and extravagant," and it is proposed that such questions should be referred to a panel of, say, three eminent electrical engineers appointed by the Minister on the advice of the President of the Institution of Electrical Engineers.

Rural electrification is dealt with at some length in the White Paper. One proposal is the institution of a system of loans on easy terms for the purchase and installation of special agricultural equipment and the wiring for power of farm buildings. It is thought desirable to abandon the present requirement of a guarantee of 12½ per cent for five years. The Government will make available to the Electricity Board financial facilities not less favourable than those enjoyed by local authorities.

Coal–Oil Conversion

ARISING from the statement last week by Mr. Shinwell on coal-oil conversion the Ministry of Fuel and Power states that the applications for conversions already received are being examined, and that the applicants will be informed individually as quickly as possible whether or not an allocation of fuel oil can be made in their case. No further approach to the Ministry is necessary. Should other industrial coal consumers, whose coal saving, if their plants were converted to fuel oil would be exceptionally high in proportion to the amount of oil burned, desire to convert they should make written application to Regional Offices of the Ministry, giving full particulars. It is emphasized, however, that the amount of oil available for meeting new applications is small and coal consumers should not enter into any commitment for the conversion of their plant to fuel oil unless they have received the written approval of the Ministry.

Notwithstanding the importance of saving coal, conversion schemes have also to be compared with other desirable projects for which man-power and materials are short. Every additional million tons of oil a year used in substitution for coal involves the provision of about 25,000 tons of steel for installations and transport facilities in this country, as well as a recurrent expenditure of 20,000 tons of steel a year for production and refining operations overseas.

Educational Films

FOUR of a new series of films designed primarily for use in schools have been completed by the British Electrical Development Association. These explain briefly, with a minimum of technical phraseology, how electricity is generated and distributed, how to carry out simple repairs in the home and how the electric iron is constructed and should be operated.

The first film, after illustrating many of the ways in which electricity affects the life of everybody, indicates how it is produced by moving a magnet into and out of a coil of wire and the converse. The principle is then applied pictorially to the operation of a power station, with shots of various components of the plant. In the distribution film, considerable use is made of animated diagrams to show how and why the electricity generated is passed through transformers before and after transmission to provide the appropriate voltages. The reasons for and operation of oil-filled circuit-breakers are clearly presented.

A "homely" example of the simple repairs that are within the competence of the average family to undertake provides the subject of the third film. Fuse replacements (necessary in the instance illustrated because of the absence of a socket-outlet), size of fuse, the wiring of a plug, the meaning of "short-circuit" and the need for care in handling appliances and for opening the main switch first are all pointed out, largely in the form of pictorial answers to questions by the children, who are advised that more ambitious repairs should be done by a skilled electrician.

The last film deals with irons, with and without heat control, and shows inside views of the components and explains their functions, particular attention being drawn to the importance of the earth wire. Hints are given on such matters as the way in which the iron should be put away and on how different fabrics should be pressed and the temperatures required. The four films were produced at Merton Park Studios.

Britain's Export Trade

AT the Country Conference of the Chartered Institute of Secretaries on June 13th, Mr. Leslie Gamage, president of the Institute of Export, gave an address on "Britain and Her Export Trade." This comprised a survey of the origin of British overseas trade and the rise of this country to the position of the world's leading industrial exporter, a position which two wars had seriously shaken. In a highly competitive world we now had to support a population of 47 millions in an island capable of supporting only 20 millions under natural conditions. At present we were not supplying manufactured goods in sufficient quantities to enable us to pay for imported goods and materials and we were faced with the necessity to "Export or Die" or "Export or Emigrate."

The public did not realize the true position. Mr. Gamage said that our chief hope lay in world economic unity, largely a responsibility of the United States, but we had first to set our own house in order. We had great assets in the British Commonwealth and the national character—skill and scientific knowledge—which must be developed by education and backed by the manufacturing of the right products and industrial and political fair dealing.

Welding Institute's Meeting

MEMBERS of the Institute of Welding held a three-day summer conference at Newcastle-on-Tyne recently. Mr. N. Hunter and Mr. J. P. Wadling presented a paper on ship welding on Tyneside and Mr. R. C. Thompson and Mr. J. P. Allan dealt with ship welding on the Wear. Mr. J. A. Dorrat, North-Eastern Marine Engineering Co., Ltd., lectured on welding as applied to marine engineering. At a dinner at Newcastle, Mr. N. Hunter asserted that everything the Americans had done during the war as regards welding to expedite the building of ships, they had learned from this country. The delegates toured shipyards and engineering works. Mr. A. Dyson, national president, attended the conference.

COMMERCE and INDUSTRY

New Cost of Living Index.

As from Monday last, June 17th, the Government's new cost of living index was put into operation; it will form the basis (100) of figures to be published about the middle of each month. The old index is entirely superseded and the new compilation gives greater weight to the non-food items—65 per cent against 40 per cent. Electricity is now shown separately in the "fuel and light" group, and in the "household durable goods" group account is taken of the prices of such things as cookers, heaters, vacuum cleaners and radio sets.

A.E.I. in South Africa

Vickers, Ltd., and Associated Electrical Industries, Ltd., are to participate financially in Vanderbijl Engineering Corporation, Ltd. (Vecor) which has large works at Vanderbijl Ark, near Johannesburg, making mechanical engineering plant and equipment. Associated Electrical Industries, Ltd., through its subsidiary Metropolitan-Vickers Electrical Co., Ltd., has also acquired the equity of L. H. Marthinusen, Ltd., electrical engineers, of Johannesburg, in which Vecor will also acquire an interest.

Survey of Historical Plant

The Newcomen Society, in association with the Birmingham Common Good Trust, is to carry out a survey of all historical plant or records in the Midlands. The survey will be confined to the counties of Derbyshire, Staffordshire, Shropshire, Warwickshire and Worcestershire, and it is intended to cover all items of technological interest, including prime movers, large or small, production machinery of all types, articles made by rare or obsolete processes, papers, drawings, MS. books and other records.

Coal-Mine Ventilation

A memorandum on the Coal Mines (Ventilation) General Regulations, 1947, has been prepared by the Ministry of Fuel and Power (M. & Q. Form No. 135, H.M. Stationery Office, 2d. net). This deals with the subject under three main headings: "Testing of the General Standard of Ventilation," "Prevention of Leakage of Air" and "Underground Fans."

Darwen District Heating Scheme

Darwen Town Council recently approved a recommendation by the Electricity Committee to proceed with a district heating scheme estimated to cost £500,000. The Mayor (Councillor J. Braithwaite) said it would be necessary to provide new power and heat generators and boilers of modern design at the electricity works with pipe-lines through which steam or hot water could pass. There would be a saving of 15,000 tons of coal a year (about £38,000 at present prices). Mr. A. Watson (electrical engineer) told a correspondent that the scheme would involve a new generating station. It was proposed to have back-pressure turbo-generators to supply the electricity required. The steam would be mainly for industrial purposes, and might be utilized afterwards to heat water to high temperature for circulation on secondary pipe lines for private houses and small commercial premises.

Purchase Tax Ruling.

The Fleetwood Vacancy

It was stated at a meeting of the Fleetwood Electricity Committee, on June 11th, that since Mr. W. P. Lilwall, the electrical engineer, retired on May 31st, no one had been in charge of the undertaking. A proposal for the temporary appointment of Mr. W. P. Lilwall as consultant was defeated, as was a proposal to elect Mr. J. W. Renshaw, one of the departmental heads as temporary successor. Mr. Renshaw retires in November. Mr. C. Drummond (another departmental head) was appointed to fill the post temporarily at a salary of £840, plus £60 a year bonus.

Purchase Tax on Domestic Appliances

The Commissioners of Customs and Excise, after consultation with trade interests concerned, announce that stoves, grates, ranges and fire-places designed for burning solid fuel and having also provision for alternative or supplementary heating by electricity or gas, e.g., fire-places with electric radiator panels, and solid-fuel-fired ovens with gas burners, are liable to purchase tax at the rate of 66⅔ per cent. In the case of an assembly comprising a solid-fuel fire or cooking range with a separate gas or electric stove *en suite*, tax is chargeable only on the gas or electric stove. Domestic stoves, grates, ranges and fire-places designed for burning solid fuel only, but having built-in provision for gas ignition, or combustion controls operated electrically, are not chargeable.

Refrigerators for Temporary Bungalows

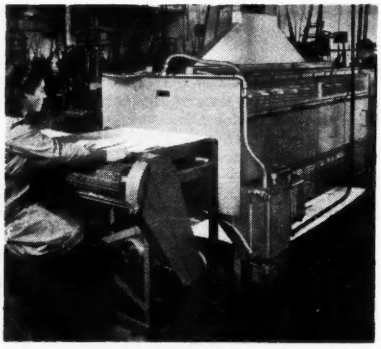
In a circular letter to housing authorities the Ministry of Health states that the Ministry of Works is now in a position to begin supplying a.c. refrigerators to those temporary bungalows which, although otherwise completed, still lack this appliance. Arrangements have already been made by the Ministry of Works with the local authorities concerned for the carrying out of certain modifications to the kitchen unit which are a necessary preliminary to the installation of the refrigerator, and the Regional Surveyor of the Ministry of Works should be

advised as soon as these modifications have been completed. Dates for delivery to particular sites cannot be fixed at present, but it is anticipated that the production required for the whole programme will be completed by next spring.

Deliveries will be made in bulk to central depots and authorities are asked to make local arrangements for the refrigerators to be installed. Reasonable charges incurred in respect of storage, delivery, installation and testing will be reimbursed by the Ministry of Works.

Infra-Red Drying Plant

The International Model Aircraft Co., carries on a considerable home and export trade in model aeroplane kit sets and to speed up production it recently installed the "Metrovick" electric infra-red oven shown in the accompanying illustration for drying the balsa wood sheets from which the sets are made. Before the design



Infra-red plant drying balsa wood sheets for model aircraft

of the parts is impressed the balsa wood sheets are soaked in water; this prevents tearing of the fibres and ensures that a clean line is impressed. Afterwards of course the sheets have to be dried before packing and, depending on the season, air drying took days or even weeks. Infra-Red drying time is four minutes. The plant, fitted with eighty infra-red lamps having a loading of 20 kV, measures 8 ft by 4 ft.

Brush Foremen's Conference

The Brush Foremen's Association held its fifth annual conference at the Falcon Works of the Brush Electrical Engineering Co., Ltd., at Loughborough, recently, where it entertained a large number of visiting foremen from other companies situated all over the country. The conference opened with a dinner in the staff canteen at which the delegates were addressed by Sir Godfrey Ince, Permanent Secretary of the Ministry of Labour and National Service, and Mr. A. P. Good, managing director of the Brush Electrical Engineering Co. At the first session on the following morning the delegates were addressed by Mr. F. E. Chappell, Director of Production Efficiency Service of the Board of Trade.

International Standardization

Sir Clifford Paterson, F.R.S., deputy chairman of the British Standards Institution, and members of the Council of the Institution entertained Mr. Howard Coonley, the first president of the International Organization for Standardization, at a cocktail party at the Institution. Mr. Coonley played an active part in production during the first world war, and during the recent war was in charge of the conservation, standardization and specification work of the War Production Board. He has had many years' manufacturing experience and has been president of the National Association of Manufacturers, U.S.A. He was instrumental in securing American support for the British Standards Institution's plan for forming a United Nations Standards Co-ordinating Committee during the war. This committee has now become the International Organization for Standardization, and by unanimous vote invited Mr. Coonley to be its first president. Twenty-eight nations have joined the new organization.

Carbon Production

Powell Duffryn, Ltd., has registered a new company named Powell Duffryn Carbon Products, Ltd., which will carry on in the recently-acquired Hayes factory the commercial manufacture of carbon products which has previously been conducted in an experimental and development stage at Battersea by Delanium, Ltd., also a Powell Duffryn subsidiary. The name of Delanium, Ltd., has been changed to Powell Duffryn Research Laboratories, Ltd.

Cable Makers' Sales Conference

B.I. Callender's annual sales conference under the chairmanship of Mr. F. Waine, director and manager (commercial), and attended by senior members of the sales management, was held recently at the Hotel Metropole, Brighton. A number of the company's directors were present at the dinner which followed at the Grand Hotel.

Overseas Trade Analysis

For its members' information the British Engineers' Association has produced a study of the direction and trend of United Kingdom exports, the principal feature being five tables and two charts. The first table differentiates between exports and imports to and from "hard" currency and other areas and demonstrates the fact that shipments to hard currency countries are only about a fifth of the total. Table 2 shows the distribution of United Kingdom and United States exports in 1913, 1938 and 1946; Table 3 gives the relative shares

of the two countries in the import trade of British Dominions and certain foreign countries; while Table 4 shows sterling values of this trade, with the addition of some other countries. The fifth table and the two charts assess the values (declared and adjusted on a 1938 basis) of total exports in 1945, 1946 and the first quarter of 1947, and the values of machinery shipments.

Generation of Electricity

During May authorized electricity undertakings generated a total of 3,092 million kWh as compared with 3,237 million in May last year—a decline of about 4½ per cent. The kWh sent out totalled 2,915 million kWh (against 3,049 million in May, 1946). In the first five months of the year 18,814 million kWh was generated as compared with 17,719 million for the corresponding period of last year—an increase of 6·2 per cent.

Visits to Scottish Works

Mr. Wm. Leonard, Joint Parliamentary Secretary to the Ministry of Supply, recently made a tour of a number of Scottish works. He visited the Philips lamp factory at Hamilton and at the workshops of Bruce Peebles, Ltd., East Pilton, Edinburgh, he saw generating plant being made for the North of Scotland Hydro-Electric Board's projects, mining equipment, power transformers, rotary convertors, and electric motors of all kinds. At Carron works, Falkirk, Mr. Leonard said local authorities could escape the tax on gas and electric heating and working appliances by buying them in parts and assembling them in their own workshops. He also visited the Atlas Foundry, Bathgate, where castings for electric power plant are being made.

Direct-on-line Fluorescent Lamps

By the application of a radio-active pre-ionizing coating on the inside of the glass before the fluorescent coating a direct-on-line fluorescent tube has been produced which requires no starter switch or ballast unit. Replacing the ballast unit, weighing 3 lb or more, are a resistor and condenser in series having a total weight of 3 oz. The light output and life are claimed to be identical with that of a conventional fluorescent lamp. The new lamps are rated at 10 W per ft and the present maximum length for reliable starting is 30 in. Its inventor is Dr. John Brennan, late of Barlite, Ltd., who is marketing the unit in conjunction with Mr. Leo O'Connor, of 27, Wellington Square, London, S.W.1.

New Marine Signalling Lamp

Signalling lamps carried on British merchant ships will in future be electric daylight lamps, with not less than 60,000 candle power, giving a range of five miles on a normal bright day in Home waters. These lamps will replace oil lamps, after a date to be fixed, as the approved type to be carried by ships of over 150 gross tons making international voyages. A sighting device is to be incorporated in the new lamp so that the beam can be directed on to the receiving station. The lamps will be similar to the lamp developed by the Royal Navy and used extensively during the war by the Merchant Navy.

Manufacturers wishing to produce the lamp will be required to meet the conditions of the specification which has been approved by the Minister of Transport, and will also be required to submit specimen lamps to the National Physical Laboratory for testing. Copies of the specification can be obtained from the Ministry of Transport, Berkeley Square House, W.1.

Contract Price Adjustment Formulæ

The latest figures for use in connection with the B.E.A.M.A. contract price adjustment formulæ are as follows:—Rate of pay for adult male labour as at June 14th: 110s. (unchanged). Board of Trade index figure for intermediate products, June 14th: 222·9, the figure for May (against 215·9 for April).

A.O.E.C. Annual Meeting

In his presidential address at the annual meeting of the Association of Officers and Staff Members of Electricity (Power and Supply) Companies of Great Britain, Brig.-Gen. R. F. Legge referred to the Electricity Bill and said the Executive Committee had informed the Ministry of Fuel and Power that the making of pensions regulations by the Minister should be mandatory, not merely optional; that it should be competent for every officer who suffered loss of employment or loss or diminution of emoluments or pension rights, or whose position was worsened in consequence of the vesting of an undertaking, to claim compensation; and that the right to claim should not be limited to cases specified in the Regulations. Also that in any case where a holding company's undertaking was not taken over because that company held less than the qualifying 75 per cent in statutory companies, an employee who suffered loss because an undertaking which absorbed part of his time was taken over should be eligible to claim compensation.

I.M.E.A. Bristol Luncheon

The annual general meeting of the South-West England and South Wales Centre of the Incorporated Municipal Electrical Association, preceded by luncheon on the invitation of the City of Bristol Electricity Committee, was held at the Grand Hotel, Bristol, last week.

The chairman of the Centre, Mr. Dawson Thomas, presided and among those present were the president (Mr. J. S. Pickles), the general secretary (Mr. J. W. Simpson), the Lord Mayor (Mr. Gilbert S. James), the town clerk, the city treasurer and members of the Electricity Committee. The president proposed "The City

and County of Bristol," and the Lord Mayor replied. Mr. J. T. H. Legge outlined the progress of the supply industry over a period of many years, and said that every effort was being made to construct new and additional plant to meet the present and future demands of the industrial and domestic consumers. He hoped that they would, by co-operative effort, allocate and adjust their peak loads to suit the limited capacity of the plant available. Mr. W. A. Wilkins, M.P., said he was confident that ultimately with the new "set-up" there would be a better service and cheaper supplies available and appealed for the sustained and co-operative effort of everyone in the industry.

Australian Tariff Inquiry

The Commonwealth Minister of Trade and Customs has referred to the Tariff Board the question of the rate of duty to be imposed on circuit breakers or switch units under Tariff Item 179 (B) (1). This item covers "Circuit breakers or switch units, metal-clad or otherwise, for use at voltages above 15,000 or at any voltage if the rated rupturing capacity is 250,000 kVA or higher." At present these are admitted free of duty under the British preferential tariff. Under the general tariff there are a 15 per cent customs duty and 4 per cent primage duty, *ad valorem*. United Kingdom interests desiring to present evidence at the inquiry should communicate at once with the Board of Trade, Export Promotion Department, 35, Old Queen Street, London, S.W.1, quoting reference E.P.D. 21030/1947.

Argentina Restricts Imports

The Argentine Central Bank announced on June 12th the suspension until further notice of exchange permits for the import of several classes of goods as well as alterations in exchange rates for other imports. The goods for which import exchange permits will no longer be issued include certain types of electric motors.

The exchange rate for certain small electrical appliances is to be 422·89 pesos per $100 (against 493·50).—*Reuter* (Buenos Aires).

Uruguayan Import Decisions

Among the goods recently placed in the "third category" by the Uruguayan authorities are electric refrigerators, irons and lamps and electrical installation accessories. For these it is necessary to obtain import licences, containing a promise of the foreign exchange required, before the goods are shipped.

Wages in the Contracting Industry

As from the third pay day in June the whole of the territory included in Grade C under the wages agreement of the N.J.I.C. for the Electrical Contracting Industry is "up-rated" to Grade B. This arrangement is retrospective as from the third pay day in January last.

Trade Publications

Enfield Cables, Ltd.—A series of invitation cards which is being sent to delegates to the I.M.E.A. Convention, drawing their attention to the company's stand at the exhibition, etc.

Standard Telephones & Cables, Ltd., Connaught House, 63, Aldwych, London, W.C.2.—Illustrated brochures and leaflets on "Styrene" joints and terminations for power cables, voice-frequency dialling and signalling in telephony, quartz crystals in evacuated glass envelopes, valves for communication and industry and radio beam approach receiving equipment to assist aircraft landing.

"Minipot" Appliances, Ltd., 35, Vittoria Street, Birmingham, 1.—Illustrated and priced leaflet on a low-voltage bed warming blanket energized through a double-wound transformer.

Flexible Non-Metallic Conduits, Ltd., 208, Tottenham Court Road, London, W.1. Illustrated brochure describing the "Gilflex" system of wiring for small houses.

Birmingham Electric Club

The summer outing of the Birmingham Electric Club will take place on July 4th, when a visit will be made to the Hams Hall power station of Birmingham Corporation.

Building Centre

The telephone numbers of the Building Centre, 9, Conduit Street, London, W.1 (all sections), are now Mayfair 8641 to 8646.

Trade Announcements

A few months ago the Industrial Electrical Co., Ltd., purchased an industrial property at Penryn, South Cornwall, for the purpose of establishing a branch in South-West England. The premises have now been equipped as a works for the repair and rewinding of electric motors, with offices and showrooms for the sale of new and reconditioned machines. The manager is Mr. T. Atkinson, who served his apprenticeship with Dynamo & Motor Repairs, Ltd., Wembley, and during the war held a commission in the R.A.F.

Edmiston Brown & Co., Ltd., have just completed the erection of new works and offices at 274-278, Whitehill Street, Glasgow, E.1. The new premises include a comprehensive machine shop. It is the company's intention to develop its control gear and to carry out extensive mechanical and electrical repairs.

The London office of Brookhirst Switchgear, Ltd., is moving on June 30th to 54, Victoria Street, S.W.1.

Hirst, Ibbetson & Taylor, Ltd., inform us that they have now returned to Liverpool and their address is 74, Whitechapel, Liverpool (telephone: Royal 6106).

As from Monday next the head office and works of Hopkinson Motors & Electric Co., Ltd., will be Birchgrove, Cardiff.

Codes of Practice

Their Origin, Nature and Contents

(From a Correspondent)

WHAT is the purpose of Codes of Practice, general and electrical, several of which have appeared in the form of printed drafts for circulation with a view to comment? Briefly, these documents contain recommendations on the best methods of providing, in the design of any kind of engineering scheme, for the utilization of constructional materials that conform to relevant British Standard Specifications.

It cannot be too often repeated, nor too strongly emphasized, that no Code of Practice is, or has ever been intended to be, a specification, though it is hoped by those responsible for the production of Codes that designers and others concerned will take advantage of the coded recommendations when drafting their own specifications. A Code of Practice is *not* a mandatory document; it represents the results of exhaustive study and co-operation between all interests involved in the matter, such as designers, consultants, manufacturers, contractors and artisans.

In 1942, as the result of negotiations initiated by the Minister of Works and Planning (as his title then was) in consultation with various Government Departments, a Codes of Practice Committee was set up with the headquarters of its secretariat at 42, Onslow Gardens, South Kensington, London, S.W.7.

Functions of Committee

This Committee is an entirely self-contained organization and does not form part of any Ministry or Department. Those who wish to study its constitution and functions should consult its first and second reports, 1943, published by H.M. Stationery Office. It should be made clear, however, that the Committee is not responsible for the actual drafting of Codes, although the technical officers attached to its secretariat do in fact render active assistance to the various committees, sub-committees and panels appointed by the various technical institutions to undertake the actual drafting. Thus the Institution of Electrical Engineers is primarily responsible for electrical Codes, the actual drafting being carried out by numerous committees and panels of specialists appointed by the I.E.E. Code Committee, by which draft electrical Codes are approved before being transmitted to the Codes of Practice Committee's secretariat.

The Codes of Practice Committee maintains close liaison with all technical and scientific bodies in this country, in all parts of the British Commonwealth and Empire, and in most foreign countries. It is thus in a position not merely to receive, edit and publish Codes of Practice, but also to establish and maintain for all concerned, such technical and scientific contacts as may be necessary and desirable. The actual publication of Codes in printed form, it should be made clear, is carried out by the British Standards Institution, from which they can be obtained in the same way as B.S. Specifications.

Collation of Wide Experience

It will be quite apparent, therefore, that the Codes published from time to time are documents which epitomize the collated experience of the whole technical world and they are worthy of very careful study. It is not sufficient, however, to study any one Code without reference to all other relevant documents. Every Code is drafted in the same form and contains sections upon materials, design, work (i.e., execution of design) and maintenance. Thus, if materials are being studied, reference should be made to the relevant B.S.S. listed in the Codes concerned and to the "Materials Section" of all other relevant Codes.

The various Post-war Building Studies published by the Ministry of Works (obtainable from the Stationery Office) form the basis on which most Codes of Practice are founded and should also receive simultaneous attention; e.g., Post-war Building Study No. 11 "Electrical Installations."

The overriding Codes are known as Functional Codes and are classified in chapters, each of which deals with one particular subject in relation to building, occupancy and conditions; the only chapter here concerned is Chapter VII, which deals with "Services" (heating, lighting, water supply, etc.). There are also General Series Codes, to a total of some 600, which are

classified under the three headings "Carcase," "Finishings" and "Installations"; the last mentioned includes other services besides electricity.

Electrical Codes of Practice fall under Chapter VII of the Functional Codes and under the Installations Group of the General Series Codes. Every Code has its own distinctive decimal number, which will eventually be unvarying. So far the drafting of 28 Codes has been undertaken, of which ten have been published in printed form as drafts for comment. The scheme of electrical Codes is divided under six headings of "Supply" covering services and controls, "Private Generating Plant," "Wiring," the "Equipment and Apparatus" group comprising at present 12 Codes dealing with lighting, heating, hot water supply, cooking, laundering, refrigeration, motive power, farming and horticulture and educational equipment; the "Special Installations" group includes a Code dealing with flame proof equipment, while under "Telecommunications" are included telegraphy, telephony, radio, television, sound distribution, bells, staff location, clocks and fire-alarms.

Recent Electrical Draft Codes

Codes which have been published recently as drafts for comment are (3.6) Electrical Installations (general); (3.611) Provision of Electricity Service Cables for Small Houses; (3.613) Installation of Consumer's Electricity Supply Controls for Small Dwellings (for a.c. systems); (3.62) Private Electric Generating Plant; (3.63) Choice, Installation and Maintenance of Electric Wiring Systems (for power, lighting, or heating circuits) in Buildings; (3.6411) Provision of Electric Lighting in Dwellings; (3.6412) Installation of Electric Lighting in Schools; (3.6431) Installation of Domestic Electric Cookers; and (3.6443) Installation of Vapour-compression Domestic Electric Refrigerators.

There is also a Code, senior in age to all other electrical Codes, on "Lightning Protection." It was originally published in 1942 and is now under revision; it retains, at present, its old number (3.416).

Other Codes, under the above-mentioned headings, will be published in due course, but (3.451) on "Electric Lifts for Passengers, Goods and Service" was drafted by the Institution of Mechanical Engineers and is not included in the electrical series.

Comments on all draft Codes, from whatever source, are welcomed. The publication of a new draft Code is always announced in the technical press. Drafts are obtainable from the British Standards Institution, 28, Victoria Street, London, S.W.1, to whom comments should be sent for eventual forwarding to the Codes of Practice Committee. The usual time limit for receipt of comments is 40 days from publication of the draft.

Comments should be constructive and should be confined to the actual contents of the particular Code concerned. Technical comments concerned with good practice are especially welcomed; they should be brief and to the point.

After consideration of the various comments received by the relevant Committee, draft Codes are amended suitably and eventually appear in their final printed form. No electrical Code has yet reached this stage, though several are likely to do so this year. In due course, within five years, all Codes will be re-examined with a view to such revision as will bring them into line with current practice at that time.

Apart from any new technical developments which may by then have come into fashion, the successful revision of the Codes will depend chiefly on the experience gained by those who have been using them as aids to the solution of those problems, involving materials, design and maintenance, which arise almost daily in electrical and building practice. It is earnestly hoped by all who are now concerned with the drafting and publication of Codes that they will be so used.

It will be realized that so comprehensive a scheme of Codes needs, for its success and future developments, the co-operation of all designers, constructors and maintenance staff, in order that old installations may be brought up to date; that new installations may be designed, constructed and maintained in accordance with the principles recommended in Codes; and that the future revision of Codes may be undertaken in the light of the experience thus gained.

Pensions for American Electricians

A PLAN by which American electrical contractors are to contribute equally with employees to a union pension fund was put into effect last month. The scheme is the result of an agreement between the National Electrical Contractors' Association and the International Brotherhood of Electrical Workers. The Commissioner of Internal Revenue has informed the N.E.C.A. that payments into the fund are deducible as items of business cost.

ELECTRICITY SUPPLY

Tir John Fuel Stocks. Wimbledon Transmission System.

Brierfield.—REDUCED CHARGES.—From the June quarter under the "all-in" rateable value tariff fixed charges for residences will be: 30 per cent on first £8 rateable value, 20 per cent on next £14, and 5 per cent thereafter, with a minimum annual charge of £2 12s. and a maximum of £7. Meter rents are being lowered from 1s. to 6d. per quarter (ordinary meters) and from 2s. 2d. to 1s. 1d. (rateable value meters). The ordinary lighting flat rate is being reduced from 6½d. to 5½d. per kWh and prepayment lighting from 7d. to 6½d. per kWh. A 5 per cent addition to quarterly accounts is to be cancelled, and a discount of 2½ per cent allowed for prompt payment.

Eccles.—SUPPLY TO ORDNANCE FACTORY.—The Corporation has received sanction to borrow £9,213 for mains and £20,521 for plant in connection with the provision of an additional supply of electricity to the Royal Ordnance Factory at Patricroft.

Glasgow.—BRAEHEAD STATION DESIGN.—The Electricity Committee has now approved a drawing prepared by Sir Alexander Gibb & Partners showing a perspective view of the proposed new generating station at Braehead, and has authorized the preparation of the final drawings for submission to the Royal Fine Arts Commission for Scotland.

Luton.—LOAN APPLICATION.—The Corporation is to seek sanction to borrow £137,500 for supply of electricity to the housing estate at Farley Hill.

Northern Ireland.—TRANSFER OF UNDERTAKINGS.—At a meeting of the Portstewart Council a letter was read from the Electricity Board for Northern Ireland in which it was stated that, subject to certain details, it had been agreed to transfer the undertakings of the Antrim Electricity Supply Co. and the Antrim Electricity Distribution Co., Ltd., to the Board.

Portsmouth. — SYSTEM CONVERSION. — At a cost of £123,000 the electricity supply system in seven areas is to be converted to three-phase, 240 V.

St. Pancras.—ARRANGEMENT WITH ST. MARYLEBONE.—To deal with the increased load in the south-eastern corner of the borough would require the provision of a new substation. As, however, the St. Marylebone Council's Hanway Place substation is in the immediate vicinity, and having regard to the provisions of the Electricity Bill, the latter Council has been asked whether it would be prepared to give a l.v. bulk supply for a maximum load of 600 kVA from this substation. St. Marylebone Council proposes to give the supply on the basis of the C.E.B. two-part tariff.

Scotland.—STORR LOCHS SCHEME.—The North of Scotland Hydro-Electric Board published on June 13th the Storr Lochs Constructional Scheme in the Island of Skye—the first hydro-electric scheme in the Western Isles. The project, which will cost about £247,000, will be developed in two stages. Electricity will be distributed by 178 miles of h.v. and 151 miles of l.v. distribution lines to over 70 per cent of the population of this island. The site is a valley south of the precipice of Storr, between Portree and Staffin. A gravity type dam 170 ft long and 36 ft high will be constructed at the north end of Loch Leathan and a 2,800 ft pipe-line will carry the water from the loch to the generating station (gross head 440 ft) on the shore near the mouth of the Bearreraig River. The plant, initially one 800-kW set, will be increased in the second stage to 2,400 kW.

Sunderland.—LOANS SANCTIONED.—Sanction has been received by the Town Council to borrow £1,450 for extending the electricity supply at J. L. Thompson & Sons' shipyard and £3,278 for substations and mains.

ELECTRICITY SUPPLY IMPROVEMENTS.—Extensive improvements are to be carried out to the Corporation's electricity undertaking at a cost of £142,194 and application has been made to the Electricity Commissioners to borrow the amount. The borough electrical engineer (Mr. W. A. Royle) in a report to the Electricity Committee said that the continued growth of the undertaking made it essential for steps to be taken to increase the feeder capacity of the h.v. distribution system. In order that the present additions should not hamper future developments in regard to the generating plant and grid connections arrangements had been made for the present extensions to allow for future additions without shutting down major sections of the plant.

Swansea.—PREPARING FOR WINTER.—Replying to Councillor S. C. Jenkins, the electrical engineer (Mr. H. E. Blackiston) stated at a meeting of the Electricity Committee that the Coal Board had accepted the principle that all the anthracite duff from the Evans Bevan unit, as well as from the Amalgamated Anthracite unit which had the contract with the Corporation, was to go to Tir John as long as it was required. Only duff in standing dumps and too wet to be used at Tir John was being shipped. The result was that besides consuming 6,000 tons a week 8,000 tons had been added to stock in the last four weeks. He felt fairly certain that within three months they would have as much as they could stock in existing conditions. If these expectations were realized they should have sufficient fuel for next winter.

Wimbledon. — THREE-PHASE TRANSMISSION SYSTEM.—The Electricity Committee has accepted a report submitted by the chief engineer and manager (Mr. H. C. Spence) on the cost of the installation of a three-phase 11-kV transmission system estimated at £603,000. The estimated capital expenditure of £46,345 for the replacement of single-phase cables by three-phase cables to meet immediate requirements and £33,180 towards the provision of three-phase transformers in primary substations, forming the preliminary part of this scheme, has been approved by the Borough Council.

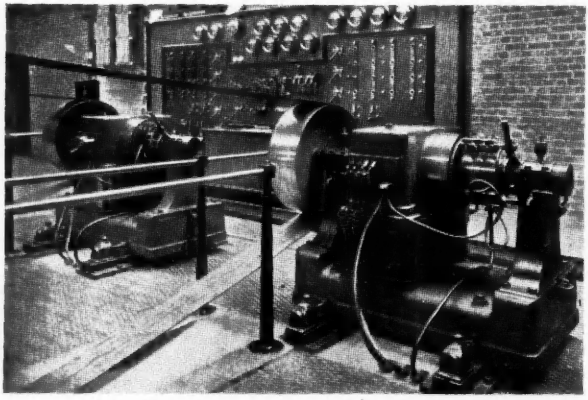
Wolverhampton. — DISTRIBUTION IMPROVEMENTS.—The Corporation has agreed to the provision of improved supplies to Brewood at a cost of £7,416, Merry Hill (£9,235), and Somerford pumping station (£9,423).

Leyton Jubilee

New Showrooms Opened

THE Leyton Corporation electricity undertaking completed fifty years of service in September, 1946. The jubilee celebrations, however, were postponed until Saturday last, when a luncheon was held at the Leyton Town Hall at which the principal guest was Mr. E. Shinwell, Minister of Fuel and Power, who later formally opened the new electricity showrooms and service centre.

The original plant consisted of two 35-kW 150-V d.c. dynamos (Electric Construction Co.), driven by 55-b.h.p. gas engines (Wells Bros.),



Original 35-kW E.C.C. dynamos installed at Leyton in 1896

the resident engineer being Mr. H. C. Bishop. Generation was abandoned by the Council in 1920 in favour of bulk supplies from the Walthamstow Corporation and later, in addition, from the County of London Electric Supply Co. An assisted wiring scheme was inaugurated in 1926, and further showrooms were opened in High Road, Leyton, and Lea Bridge Road. An additional showroom was opened in Leytonstone in 1934. Meter rents were abolished as long ago as 1910.

Speaking at the luncheon, Mr. Shinwell referred to the nationalization of the industry and said that the transfer of all the electricity undertakings to the contemplated British Electricity Authority was a gigantic undertaking, but there was plenty of evidence that within the electricity supply industry, both on the privately-owned and municipal sides, there was a readiness to co-operate. He expected that the Electricity Bill would become law before the Parliamentary Recess.

Mr. A. E. Morgan, borough electrical engineer and manager, said Leyton claimed that it provided one of the most efficient services in the country. Last year about 50 million kWh was sold to 30,000 consumers. He paid tribute to the work of the N.J.I.C. and the N.J.B. to whom were largely due the amicable relations in the industry.

Sir John Kennedy, deputy chairman of the Electricity Commission, said that it had been obvious for some years past that if the electricity supply industry was going to fulfil its function a considerable scheme of reorganization was necessary. He had great confidence in the future of the reorganized industry.

Following the luncheon Mr. Shinwell formally opened the new showrooms. He said that they would be important not so much for encouraging the use of electricity but for giving consumers advice and teaching them the proper use of domestic appliances.

Work on the construction of the showrooms commenced in 1938, but was stopped by the war. During the war the ground floor of these premises was used as a British Restaurant. In 1945 it was decided, owing to the restrictions on building, to temporarily finish the ground floor. The showrooms, which are of modern design, are lighted by fluorescent fittings and include a comprehensive display of domestic appliances. They will cater for the needs of the consumers in the northern part of the borough.

FINANCIAL SECTION

Company News. Stock Exchange Activities.

Reports and Dividends

Babcock & Wilcox, Ltd.—Presiding at the recent annual meeting Lt. Col. Sir John Greenly (chairman), said that in pursuance of their policy of ploughing back available funds into the business and embarking on extensive re-equipment and modernization schemes, over £600,000 had been expended on these schemes during the past financial year. Referring to the coal supplies to power stations, the chairman said that it was common knowledge that approximately 15 per cent of installed capacity in power stations was being lost owing to the poor quality of the coal being supplied, and this represented at least 350,000 kW or the equivalent of a large power station. It was essential that a real effort should be made to supply far better standard qualities of coal than was the case at present.

With regard to the standardization of steam-generating plant, this was no easy task even when supplies of good coal were available. If, however, regular supplies of graded fuel of known calorific value were available, and purchasers would be content during the next few years to accept types of steam-raising equipment of proved efficiency and design, much could be done to increase production. The last financial year closed with an order book far in excess of any previous record and of this 33 per cent was for export. The position of subsidiary companies was equally satisfactory.

The British Thermostat Co., Ltd.—Speaking at the recent annual meeting, Col. N. Hudson (chairman), said that the volume of business during the year under review had far exceeded that of any year preceding the war, and this with the reduction in the rate of E.P.T. had resulted in substantial profits. Their export business had been built up considerably and progress in this direction was continuing satisfactorily. Their subsidiary company, Teddington Controls, Ltd., was still operating in various buildings located in Merthyr Tydfil as the new factory had not yet been completed, but it was hoped that the company would be completely installed in the new factory by the end of the year. The order books of the company and its subsidiaries were good.

Crystalate, Ltd.—In a circular to stockholders the company states that to extend manufacturing facilities of the company and its subsidiaries, British Homophone and Ebonestos Industries, it is purchasing from Mica Products the plant, machinery and equipment of that company and of its two wholly owned subsidiaries G. H. Gregory & Co. (Plastics) and Graylon Engineering Co., which carry on similar businesses. The estimated cost is approximately £125,300, apart from stock in trade. A new subsidiary company called Mica Products will be formed to take over the factory and workpeople and Crystalate will subscribe for shares in this new subsidiary. The capital required to complete the transaction is to be raised by means of an issue of 2,075,000 new ordinary shares of 1s. each, which are to be offered at 1s. 7d. per share to holders of ordinary stock in the proportion of two new ordinary shares for every three units of stock held. The present issued capital of Crystalate is £325,000, consisting of £75,000 in 8 per cent cumulative preference stock and £250,000 in ordinary stock.

Bylock Electric, Ltd.—Particulars were published on Wednesday last week of an offer for sale by the Whitehead Industrial Trust, Ltd., of 200,000 ordinary shares of 1s. each at 30s. per share. The authorized capital of the company is £100,000 divided into 2,000,000 ordinary shares of 1s. each, of which £15,000 has been issued and fully paid or credited as fully paid. The directors consider that the business is capable of considerable expansion and in order that the company may have facilities for obtaining further capital when required a part of the ordinary share capital is being offered to the public with a view to obtaining quotation for the shares on the Stock Exchange. The company was converted into a public company on June 3rd, 1947. The directors propose in August next to pay an interim dividend of 100 per cent, actual (less tax) and they intend in due course to recommend a final dividend of 200 per cent, actual (less tax), making a total of 300 per cent for the year. The shares now offered rank for all dividends for the current year ending July 31st, 1947.

Siemens Bros. & Co., Ltd., report that after providing £200,000 for income tax and crediting £410,000 E.P.T. recoverable, the net profit for 1946 is £364,888, as compared with £290,888 for 1945. The ordinary dividend for the year is unchanged at 7½ per cent.

The Chloride Electrical Storage Co., Ltd., reports profits for the year ended March 31st last of £761,430 as compared with £486,928 for the preceding year. The final dividend on the "A" and "B" ordinary is 5 per cent, with a bonus of 10 per cent, maintaining the distribution for the year at 20 per cent.

The British Electric Traction Co., Ltd., reports a revenue for the year ended March 31st last of £823,261, as compared with £795,422 for the preceding year, and after deducting expenses, taxation and debenture stock interest, there is a balance of £365,992 (against £337,562). The final dividend on the preferred ordinary stock is 4 per cent, again making 8 per cent for the

year and the final dividend on the deferred ordinary stock is 35 per cent (against 30 per cent), making 50 per cent for the year. The total distribution for the previous year was 55 per cent which included a jubilee year bonus of 10 per cent. The balance carried to undivided profits account is £58,819.

The Altrincham Electric Supply, Ltd., reports a profit for 1946 of £27,111, as compared with £21,069 for 1945, to which is added £12,817 brought in. The final dividend on the ordinary requires £3,000 (same) and on the deferred £3,000 (same) and £16,094 is carried forward.

Bennis Combustion, Ltd., reports a profit for the year to April 30th, before taxation, of £34,000, as compared with £21,458 for 1945-46. The final ordinary dividend is 7½ per cent (against 5 per cent), raising the distribution for the year to 12½ per cent (against 10 per cent).

The West Devon Electric Supply Co., Ltd., shows a balance on revenue account for 1946 of £28,290 (against £34,162), plus interest £489 (£450) and dividend from subsidiary £1,100 (£1,000). It is prepared to pay a dividend of 7½ per cent (against 5 per cent and a bonus of 2½ per cent).

The Imperial Continental Gas Association.—At the recent annual meeting Sir George Jessel (chairman) said that if the Electricity Bill became law their holding in Edmundsons Electricity Corporation would be taken over by the State and they would be paid compensation at 31s. 6d. per £ of ordinary stock. As they held £1,854,000 of Edmundsons' ordinary stock they would receive British Electricity stock to the value of £2,920,050.

The Cawnpore Electric Supply Corporation, Ltd., reports a profit for 1946 of £122,341, as compared with £164,573 for 1945. The final dividend is 9 per cent (against 10 per cent), maintaining the distribution for the year at 13 per cent.

Whitehall Electric Investments, Ltd., reports a net profit for the year ended March 31st of £71,782 against £66,999 for 1945-46. After meeting the preference dividend, £30,532 (£29,499) is added to the carry-forward, making £454,451. The consolidated gross income of Whitehall Electric Investments, Hallminster Investments and Whitehall Canada was £274,283 (£269,530). Out of this £99,773 (£74,936) has been provided to meet loss on realization of investments, and £66,387 (£76,308) for U.K. and Canadian income tax. Assets, excluding Athens interests and taking West of England at cost, are valued at £5,055,772 (against £4,922,633).

The report states that the Athens electricity and transport companies have made good progress in the restoration of their services. The electricity company sold 194 million kWh in 1946 compared with 188 million in 1939, and the number of passengers carried by the transport company (about 150 millions) was equal to the number carried in 1939. Subject to U.K. exchange control, the board considers that the company will be justified in finding part but not the whole of the large amount of new money required for generating plant, transmission and distribution extensions, and additional rolling stock. In the West of England, sales of electricity in 1946 reached 63 million kWh, an increase of about 10 per cent on the previous year. The American & Foreign Power Co. plan of reorganization is still under consideration by the U.S. Securities and Exchange Commission.

New Companies

Custodian Holdings, Ltd.—Registered June 9th. Capital, £100. To act as nominees, trustees, etc. The directors are: Rt. Hon. Oliver Lyttelton (chairman, Associated Electrical Industries, Ltd.), Sir George E. Bailey (managing director, A.E.I., Ltd.), E. H. Ball (director, British Thomson-Houston Co., Ltd.), G. A. Cheetham, managing director, Ferguson, Pailin, Ltd.), I. R. Cox (director, A.E.I., Ltd.), E. S. Little (director, A.E.I. Finance Co., Ltd.), J. G. Lowe (director, A.E.I. Finance Co., Ltd.), A. N. E. McHaffie (chairman, A.E.I. Finance Co., Ltd.), J. N. Stephens (director, Edison Swan Electric Co., Ltd.), and Dr. H. W. H. Warren (deputy managing director, A.E.I., Ltd.). Regd. office: Crown House, Aldwych, W.C.2.

Custodian Properties, Ltd.—Registered June 9th. Capital, £50,000. To carry on the business of owners and managers of lands, buildings, etc. The directors and other particulars are similar to Custodian Holdings, Ltd.

British Electrical Contractors, Ltd.—Registered June 9th. Capital, £3,000. Subscribers: A. C. Williams and P. R. Alexander. Regd. office: 36, Taffs Mead Embankment, Cardiff.

Alstans (Electrical), Ltd.—Registered June 11th. Capital, £1,000. Electrical engineers, dealers in electrical and wireless goods, etc. Directors: S. W. Brown and A. L. Witts. Regd. office: 113a, Golden Hillock Road, Small Heath, Birmingham.

Thomas Hill (Electricians), Ltd.—Registered May 13th. Capital, £3,000. Directors: T. Hill and Mrs. M. E. Hill. Regd. office: 19, Downing Street, Farnham, Surrey.

Bankruptcies

C. Peacock, 51, Gillygate, York, electrical engineer.—Last day for receiving proofs for dividend July 2nd. Trustee, Mr. J. S. Snowball, Lantern Tower Chambers, Coppergate, York, Official Receiver.

A. S. Britton, 9, Moorside Road, Heaton Moor, Stockport, and 123, Higher Hillgate, Stockport, radio engineer and electrical contractor.—First and final dividend of 4s. 8d. in the £, payable June 20th at the offices of the trustee, Mr. A. T. Eaves, 47, Mosley Street, Manchester, 2.

STOCKS AND SHARES

FOR the time of year, Stock Exchange business is reasonably good. Two influences are at work, pulling in contrary directions. One is the caution on the part of investors which is induced by the Government's policy at home and abroad; this lays noticeable restraint upon enterprise. On the other hand, there is the continued weight of money, a factor that is likely to become accentuated within the next few months. Investment is by no means content to leave capital lying on deposit at the banks, and this leads to a continual searching of lists for sound securities which pay a living rate of interest on money employed. At the moment, the former of these considerations is the more potent of the two. Nevertheless, the reception given to new issues affords evidence of the willingness of capital to subscribe for promising ventures. No small part of to-day's successes is possibly due to the activities of the "stag brigade," but the fact remains that genuine investment contributes a substantial measure of support to the newcomers that are freely offered every week.

Transport Bill

West Riding shares at 57s. show a gain of 4s. 6d. on the week. British Electric Traction deferred stock is 55 points up at 1380 and Thomas Tilling shares at 66s. are 1s. 6d. higher. The reason for the rise is the assumption that compensation terms in respect of motor transport companies will be determined on assets value, instead of Stock Exchange prices.

In the House of Lords, vigorous attacks have been made upon the compensation proposals, based on Stock Exchange quotations, as applied to Home Railway stocks and electricity supply companies' shares, but the Government has so far declined to depart from its original intention. The motor transport companies, however, are to be assessed, according to a Government amendment to the Bill, upon a different and a fairer basis. The result has been to bring about sharp improvements in the prices of the companies concerned, and these reflect upon the securities of the holding undertakings. From being a quiet and seldom-moving group, this particular section has suddenly developed a most unusual degree of activity, with prices rising almost every day.

Dividends and Reports

The increase in the Broadcast Relay Service final dividend from 6½ to 8 per cent, tax free, proved to have been discounted in the market. There has been little subsequent change in the price of the 5s. shares at about 29s. 6d. On the total distribution of 13 per cent, tax free, the gross yield works out at 4 per cent. Preliminary figures show an advance of £163,000 to £451,000 in the profits of the group, in which B.E.T. lately increased its interest. Henley's Telegraph 5s. shares at 27s. 3d. are unchanged on the final dividend, which brings the total distribution to 20 per cent (including 5 per cent bonus) for the tenth year running. The yield is £3 13s. 6d. per cent. Profits are £40,000 up, at £253,000.

Siemens Bros.' dividend for 1946 is again 7½ per cent, but the preliminary statement shows a rise in the net profit from £291,000 to £365,000, the highest figure for many years. The last accounts caused some consternation through the halving of the gross trading profit, as compared with the previous earnings. On that occasion, E.P.T. recoveries largely restored the position so far as the net result was concerned. The shares are 1s. 6d. lower at 38s. 6d., showing a yield of £3 18s. 0d. per cent. Chloride Electrical Storage shares advanced to 5½ on the big expansion of profits shown in the statement accompanying the dividend declaration. Distributions of 20 per cent, of which half is declared as bonus, are being maintained on the "A" and "B" ordinary. On this basis, the return works out at £3 18s. 0d. per cent.

Week's Price Changes

In common with other sections of the industrial markets, electrical equipment shares show few changes over the past week and no decided trend one way or the other. Telephone issues remain dull on disappointment with recent company profits. Automatic Telephones declined to 76s. 3d. and Ericssons to 46s. H.T.A. were lowered to 20s. 6d. The trading loss for the year, £73,000, is more than recoverable by E.P.T. refund. Repetition of the 10 per cent dividend is thus possible, and the company has now a bank overdraft of £28,000, as against £255,000 a year ago. Johnson & Phillips shed half-a-crown to £4, but London Electric Wire advanced further to 50s. and Revo are firm at 52s. E. K. Cole are better at 25s. 6d. on news of the plan to establish a manufacturing business in India. Other radio shares are dull, with Cossors at 28s. 6d., Deccas at 58s. 9d. and E.M.I. at 23s. 9d. Cable & Wireless ordinary at 154½ is a point to the good: the preference at 119½ is 2 down on the week.

Bylock Electric

Application lists opened last Friday for 200,000 Bylock Electric 1s. ordinary shares, offered for sale at 30s. The business is described in the prospectus as the manufacture and marketing of electrical appliances for domestic, household and industrial use. Issued capital amounts to £15,000. Profits for the year ending next month are estimated at not less than £90,000, subject to tax, after allowing for the loss of production during the February coal crisis. It is the board's intention to pay an interim dividend of 100 per cent in August, and, subject to unforeseen events, to bring the total for the year up to 300 per cent. At the issue price, the prospective yield on this basis is 10 per cent. The lists closed within five minutes of their opening.

PARLIAMENTARY NEWS

By Our Special Reporter

IN the House of Commons on June 12th Mr. Peter Thorneycroft asked the Minister of Fuel and Power if he would state the reason given by Mr. Hobson for declining the position of deputy chairman of the British Electricity Authority.

Mr. Shinwell said that in the letter he wrote to him Mr. Hobson gave no reason for declining a proposal he had made to him that he should be a deputy chairman of the British Electricity Authority when it was set up.

Mr. Thorneycroft asked if the Minister was aware that Mr. Hobson was formerly one of the most experienced men in that particular field in the country; and was it not a fact that he would not serve under that particular Authority. Mr. Shinwell said that there was no indication of that in Mr. Hobson's letter.

Pithead Generation

Mr. Granville Sharp asked the Minister of Fuel and Power how many of the eighteen new power stations in the programme of the Central Electricity Board were situated at the pithead or within short haul distance of pits supplying the coal required; and what were the technical reasons which justified the establishment of the other coal-burning stations at long distances from the mines.

Mr. Shinwell said that the answer to the first part was nine. The principal factors which determined the position of power stations were:—Cost of transmission to the electricity load centres; adequate supply of cooling water throughout the year; source of suitable coal supplies; and sea or rail transport facilities.

Sites were chosen to give the lowest overall cost, having regard to those and other technical considerations. Generally speaking the transport of coal was less costly than the transmission of electricity, and that applied to the six new stations in the London and South Eastern area.

Underground Power Stations

Mr. Skeffington-Lodge asked the Minister of Fuel and Power whether he had studied the possibility of siting new electricity generating stations underground; and with what results.

Mr. Shinwell said that underground power stations would be prohibitive in cost and would in any case require chimneys of normal height. He did not, therefore, regard them as practicable.

Bankside Project

Sir Arthur Salter asked the Minister of Town and Country Planning whether he had received authoritative expert evidence as to the elimination of sulphur fumes from the proposed oil-fired Bankside generating station; and whether he would publish his evidence

Mr. Silkin said he was satisfied from the advice he had received that sulphur and other noxious fumes could be eliminated. In order to ensure that the design of the plant to be installed was satisfactory, a pilot gas washing plant was to be constructed and when the results of this were available, the Electricity Commissioners would consult with the Ministers of Health and of Works. He would keep in touch with these discussions. As regarded noise, the Electricity Commissioners imposed a condition in giving their formal consent that the undertakers should provide efficient methods for ensuring the avoidance of noise and had no reason to think that any difficulty would arise.

Cooker Production

In reply to Mr. Chetwynd the Minister of Supply (Mr. Wilmot) said that 20,000 coal-burning ranges, 18,130 electric cookers and 33,050 gas cookers were produced in April last.

Coal-Oil Conversions

Answering Mr. Skeffington-Lodge, Mr. Shinwell said that in his previous statement he explained that the annual rate of oil consumption represented by schemes of coal to oil conversion already approved would be increased to 5 million tons a year, equivalent to an annual saving of coal of 8 million tons by the middle of 1948. That programme, which was the maximum that could be achieved in that time had been reviewed, and the Government had decided against any further general extension of the programme for the time being. The matter would, however, be considered again in the autumn when the trend of coal output would be more clearly established.

In the meantime, to provide in appropriate cases for applications that were now awaiting consideration, arrangements would be made to import another million tons of oil a year. After meeting these cases there would be some margin for special cases where it could be shown that the amount of coal saved would be exceptionally high in proportion to the amount of oil burnt, but no other new applications could be entertained. The additional import of a million tons of oil a year would not begin to be available before the third quarter of 1948, but it was not anticipated that most of the firms whose applications might now be authorized would be able to complete conversion before that quarter: any exceptional case where earlier conversion was possible would be given special consideration.

In the result, unless it was decided in the autumn to increase the whole programme, the consumption of fuel oil by coal-oil conversion projects would attain a rate of 6 million tons a year and would result in an annual saving of 10 million tons of coal by 1949.